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ORIGINAL ARTICLES.

PREMATURE DIAGNOSIS AND PREMATURE TREATMENT OF SYPHILIS.

BY H. C. DEMBITZ, M.D.,
LECTURER ON SKIN DISEASES, ETC., AT THE HOSPITAL OF THE COLLEGE OF MEDICINE, LOUISVILLE, KY.

IN cases of obscure nervous troubles, in which by any possibility the disease may be due to syphilis, it is customary, as the saying is, to give the patient the benefit of the doubt, and put him on mercury and the iodides. In cases in which there are symptoms evidently caused by pressure on the brain or cord, or by tumors in other viscera, specific treatment is resorted to, and this in spite of the absence of any history of syphilis, in spite of strenuous denial, and without any definite lesions being found. This may not be strictly scientific, but it is eminently proper. In such cases we are often in doubt whether we have to deal with a malignant neoplasm or with a gumma, or perhaps a specific meningitis. In the former case we have little to hope for from treatment; in the latter case there is often prospect of much improvement, if not of cure. We hope for the patient's sake that syphilis is at the bottom of the trouble. But every gumma is likely to leave some injurious cicatrix behind, and the process may be quite rapid. There is, therefore, an urgent call for treatment while we may make a diagnosis. If positive, we have but to continue the treatment begun; otherwise we have done no harm, and have but postponed a very unfavorable, probably fatal, prognosis. We begin treatment because there is immediate danger. We are helped to a definite diagnosis, and we can do no harm.

How differently we are placed in many cases of suspicious sores, in which a diagnosis of hard chancre is made, and treatment begun before the appearance of the exanthem, or even of the indolent buboes. There is no occasion for haste, and so long as there remains the least doubt treatment certainly should not be begun. The case is exactly the reverse of the one just considered. There is no immediate danger. We prevent absolute certainty in diagnosis; if mistaken, we leave a cloud hanging over our patient for life, and even if correct we lose the measure of the effect of treatment, and, as experience proves, do not moderate the future course of the disease.

It has become customary to speak of hard and soft chancres, and the general use of these terms, the former to designate the sore that is to be followed by constitutional symptoms, the latter for the local non-infecting sore, is the cause of the numerous premature diagnoses, both positive and negative, which it is generally acknowledged are so often made. A typical chancre, it is true, is hard—has a peculiar, sharply limited induration, which, as is well known, is due to an infiltration of cells about the minute bloodvessels. A chancre is, therefore, most typical in situations in which there is an abundance of loose connective tissue, and the infiltration can become considerable without choking up the circulation and causing a breaking down of the chancre, and at the same time there is such a marked contrast between the loose tissue and the hard mass, that the latter can readily be picked up between the fingers.

A chancre of the prepuce, tonsil, scrotum or lips well shows this characteristic hardness; on the glans penis, cervix and other parts where the skin is firmly bound down and there is little connective tissue, the chancre soon ulcerates, and the hardness is rarely well marked.

On the other hand, a chancroid, when typical, is an acute inflammatory ulcer; there is an inflammatory infiltration gradually shading off into the surrounding halo and the normal skin. Yet, in some subjects, the inflammation has little acuteness, and, while on the glans the chancre may resemble a chancroid, on the prepuce or scrotum the induration of the chancroid, especially if in any way treated by caustics, may approach that which is characteristic of a chancre.

When we recollect the *chancre mixte* of Rollet, we may be much puzzled to say whether our soft sore which has been touched with nitrate of silver, and has become hard, is so as the result of treatment or of double infection. For, if the patient have received both poisons, he would of course develop a soft chancre first, and, after the period of incubation, the syphilitic virus would cause its infiltration and hardness.

There are, of course, cases in which a diagnosis of chancre can be made at the first glance, but I do not think it amiss to have recalled and reviewed some of the points that so often make a diagnosis very difficult, not to say impossible. It is certainly a commentary on the uncertainty of diagnosis from the sore alone, that such an authority as Kaposi

still finds ground to adhere to the theory of unicity.

As for the history of each case, this is, except among the most intelligent class, entirely unreliable. A sore on the penis seems to have a potent occult influence on either man's truthfulness or his memory. It is difficult to say why, for the story he tells does not always put him in a better light than the truth would. The patient's statements as to time of infection are not trustworthy, owing often to multiplied opportunities and the strange psychological fact mentioned. The consecutive or contemporaneous appearance of multiple sores is of course an important point in diagnosis, presumptive evidence in the former case of chancroid, in the latter of chancre. But I have seen cases in which several chancroids developed simultaneously, and careful treatment prevented the formation of others; while, on the other hand, chancres contemporaneous in the sense of being the result of one infection, may by the patient be observed at times several days apart, one being larger, more painful, or in a more prominent place.

It is true that by waiting for an induration of the inguinal glands much light may be gained in a week or two. Enlarged, hard glands, painless and movable, developing at both sides of the groin, above Poupart's ligament, make a diagnosis of suspicion positive. But this enlargement may be on one side, may be slight, and, not developing under the physician's observation, the significance of a slight induration of the glands of one side often leaves him in doubt.

I hold that a diagnosis of chancroid only should also be guarded. The fact of the chancroid is evidence that an erosion was present, and this same erosion may have admitted the syphilitic virus as well. I have now a case under treatment in which multiple chancroids were present for four weeks before induration set in. This was after lightly touching with nitrate of silver. Diagnosis was reserved until a week later, when both groups of inguinal glands became indurated, were freely movable and but slightly tender. At the risk of appearing to hedge, it is my custom to say: "This, so far, is a soft chancre; if no special change occurs in the sore in the next few weeks, there will be no constitutional disease." The physician can then explain that the two poisons are entirely distinct, and that, if the patient was not unfortunate enough to have picked out a companion who had both diseases, he cannot acquire both. Most patients consider this chance small, and do not worry much about it. Still, if the event transpire they will not blame their physician. This is much more satisfactory than the uncertainty of the unicists.

Can the fact be denied that many cases cannot, from the primary lesion, be diagnosticated with certainty? Are there good reasons in the majority of cases for making an immediate diagnosis? Is the patient's condition and the future course of the disease bettered by specific treatment inaugurated at once? Does he incur any new danger by awaiting the exanthem, or at least the indolent buboes? All these questions may, I think, be answered in the negative. It has often been remarked that the syphilis following chancres of the face and hands runs a more severe course than usual. This, by competent authority, has been attributed to the fact that these chancres, owing to the disfiguring effects to which they give rise, or to special danger of infection, are prematurely subjected to treatment, both local and general. This early treatment often aborts the first eruptive stage altogether, and we lose all measure of the effect of the mercurial course. But the later skin eruptions are not prevented; they tend rather to be numerous, and are deeper, with a greater tendency to suppurate. It seems to me that the first eruptions may act in the nature of a vaccination, changing the soil, so that the later syphilides are modified. When the first eruption, then, is aborted we can understand why the later one should be more severe.

Whether this be the reason or not, I believe it is rather a disadvantage than a benefit to begin general treatment at once, and therefore, even when the diagnosis of chancre is positive, I confine myself to local treatment, unless there are special and urgent reasons for pushing inunctions or internal medication. In cases in which the chancre is mild I even do without mercury in any form locally.

Believing thus, I can see no occasion for hasty diagnosis of syphilis, and still less for immediate general treatment, which prevents a rectification of a mistaken diagnosis.

"Syphilis is the best sickness—that is what I always tell you," is what Professor Kaposi, in Vienna, used to say to us when he exhibited a patient after a few weeks' treatment, showing a wonderful improvement in an apparently serious case. "Gonorrhea kills more people than syphilis," was another dictum. Syphilis is certainly insidious and deadly in some of its forms, but the public, while taught care in prevention, and due attention to a case already acquired, as well as conscientious consideration of others, should not be frightened by exaggerated accounts of the ravages of this disease. Subjects who have had, and often those who have symptoms at the time, may beget healthy children, though it is true that the greatest mortality from syphilis is *in utero*. If patients' fears were somewhat calmed they would be more willing to await developments, and the fear of a patient running off to another physician would not necessitate prompt treatment against one's better judgment.

Even when a chancre is correctly diagnosticated, general specific treatment is not in order. It has been said that mercury is to constitutional syphilis what iron is to anemia—a tonic *par excellence*. This is true when the disease is generalized, not when it is local. Here the condition for which it is so wholesome is not yet present. Mercury is a poison, and the patient is so weakened and depressed by its premature use that he is less able to bear it when it is needed. Constitutional syphilis antagonizes the mercury; the local lesion does not decrease the susceptibility. The patient, in fact, enters upon the constitutional period of the disease in an enfeebled condition.

If the diagnosis of chancre be mistaken, the mercurials are injurious, and at the same time they forever mask the diagnosis, and the patient can never feel safe. A cloud hangs over him; he fears to marry; he imagines every pimple and every ache some new manifestation of a disease he never had; he is in fact often more miserable than the man who has had his early symptoms, and has been reassured by seeing the prompt effect of proper treatment.

Another point worthy of consideration at this time is the bearing of this diagnosis on life insurance, because some companies will not take risks until after a certain number of years, and some reject altogether those who have had syphilis.

How much better then to reserve a diagnosis until it can be made with certainty. Calm the patient's anxiety and, perhaps, exaggerated fears; put him on a tonic treatment if he needs it, which will aid in the cure of the chancroid, if such it be. If a constitutional disease be about to follow, this plan will put the patient in the best possible condition to bear the disease and its treatment. It may require the aid of the dentist to put the mouth in good condition. Two or three cases may well be presented to illustrate some of the points made:

CASE I.—A man, unmarried, aged twenty-two, complains of painful swelling in the groin. He says he had a chancre four or five months ago; was treated for syphilis, and sent to Hot Springs. He describes rather vaguely several sores he had on his penis. The swelling he now has in his groin is not a gland, but merely a subcutaneous abscess. There are no indurated glands in the groin or elsewhere; there is no induration or cicatrix left to indicate a chancre, and no pigmentation or other evidence of a cutaneous eruption. There is some acne, which by a vivid imagination was probably converted into a syphilitic eruption.

Just as this abscess was attributed to syphilis, any of the ills his flesh may be heir to in years to come will be attributed to that doubtful chancre, and he will again plead to be dosed with mercury and iodide.

CASE II.—A man, twenty-eight years of age, was examined for life insurance by a friend of mine. The physical examination was entirely satisfactory, but the patient says he had syphilis, for which he was treated four years ago. He is now married, and has two healthy children. He never had an eruption. The doctor gives the patient's account, expressing his own doubt as to the diagnosis. The application was rejected.

An old diagnosis of syphilis is like a heart-murmur. We no longer regard a heart-murmur as proof of organic disease. Still the companies prefer to keep on the safe side.

CASE III.—A patient, twenty-one years of age; has a sore on his penis, diagnosticated as chancre. There is some swelling in the right groin. Treatment begun for syphilis. No general eruption occurring, the patient becomes reckless in his excursions; he has no fears of infection, and inside of one year he has acquired a veritable hard chancre.

This case hardly requires further comment. My conclusions may be very briefly summarized:

1st. Never make a diagnosis of primary syphilis until it can be made with certainty.

2d. Never treat a case until the diagnosis is absolutely certain; and then, unless there be a very special necessity, do not begin a general mercurial course until there are signs of the disease being systemic.

In men the exanthems are very rarely missed. In women, it is true, the eruption may be very slight and be overlooked. But mucous patches about the genitals and about the mouth will almost always be found; and as women in this country seldom smoke, these patches, when following a suspicious sore, will suffice for a positive diagnosis. They, as well as the eruption on the skin, constitute an indication for general treatment.

THREE CASES OF CEREBRAL APOPLEXY, ONE CASE OF PROGRESSIVE COMA, AND ONE CASE OF RHEUMATIC MENINGITIS, FOLLOWING THE GRIP.[1]

BY D. W. PRENTISS, M.D.,
OF WASHINGTON, D. C.

THE complications and consequences of the late epidemic, called the "grip," are so varied and so far-reaching, as well as of such a serious character, that I have thought a report of the following cases would be of interest and add something to the history of that remarkable disease.

CASE I. *Grip, asthma, bronchitis, apoplexy.*—Mr. B., aged fifty-seven years, has had good health, excepting asthma, from which he has suffered for many

[1] Read before the Medical Society of the District of Columbia.

years. He gives no history of apoplexy in family. He has had repeated attacks of bronchitis complicating the asthma during the past ten years. On April 1st he was taken with chill, fever, severe headache, and pains in the back and limbs. Following this there was congestion of the lungs and bronchitis. The condition was very distressing on account of the asthma. For ten days his temperature ranged from 100° to 103°, the pulse from 76 to 96. He was greatly troubled by hemorrhoids. By April 15th he had greatly improved, and appeared to be getting well, but at this date he suddenly became paralyzed, both as to motion and sensation, on the right side, in the leg, arm and face. The paralysis came on without any apparent cause. The muscles about the eye were not paralyzed. Three or four days before, he had complained of not feeling right in his head, that he could not think properly, etc., but it was supposed to be due to the opiates taken to relieve pain and produce sleep. The intellect was greatly impaired. When spoken to, he recognized persons for the moment, but soon lapsed into a condition of apathy. Speech was almost abolished by the probable involvement of the speech-center, and by the paralysis of tongue and pharynx. This condition continued with but little change until May 3d, when he died. The immediate cause of death seemed to be a sudden increase of the effusion in the brain. Treatment consisted in purging by means of croton oil at the first, followed by laxatives to keep the bowels open; bromides were used to allay nervous excitability; ergot and nourishment were given systematically by stomach and rectum.

At first this was a clear case of "grip," with the usual symptoms of fever, headache, pains in the limbs and back of a severe character, sore-throat and cough. The bronchitis was that of the "grip," aggravated by the asthma. The cough was severe and occurred in paroxysms, and may have had something to do with the apoplexy. The urine was repeatedly examined and found normal. The suffering from the hemorrhoids seemed out of proportion to the local disease. The hemorrhoid that gave the pain was internal, and refused to be relieved by suppositories of opium and belladonna, or by cocaine locally, yielding only to hypodermatic injections of morphia. The paralysis was evidently due to cerebral hemorrhage on the left side, and, from the paralysis of the face being on the same side, was above the base of the brain. The apoplexy came on six weeks after the inception of the grip.

CASE II. *Grip, bronchitis, apoplexy.*—Mr. F., aged eighty-seven years; had apparently no predisposition to apoplexy, and was in good general health. He was a remarkably active and well-preserved man for his age, a clerk in a government office, and very seldom lost a day from his work. He was taken with the grip, April 13, 1891, accompanied by fever, headache, backache, leg-ache and cough.

He was given a fever mixture, and recovered very rapidly from his symptoms, so that I made but three visits, leaving at the last a "tonic of elixir of iron, quinine and strychnine." He was well enough to go down stairs to meals, and on April 26th he said he felt so well he would go to his office the next day. He ate his breakfast with an appetite, and then sat down to read the paper. After a while one of the members of the family spoke to him, and he did not answer. This being repeated, they went to him and found him unconscious. He was carried up-stairs, and when I saw him later in the day he was still unconscious, with stertorous breathing and complete paralysis of the right side of the body, including the face. He remained comatose until death, which occurred on May 15th. He had recovered from the grip, except the exhaustion, and the apoplexy came on two weeks later.

In this case, on account of the great age of the patient, it may be true that he would have had apoplexy if he had not had the grip, but taken in connection with other cases it is of interest.

CASE III.—Mrs. H., aged sixty-seven years; had enjoyed good general health, and had always been active. There was no known predisposition to brain trouble. She had had the "grip" a month previously to the present attack, but had not entirely recovered her strength. For several days previously to the paralysis the pulse was irregular, and there was a great deal of gas in the bowels, with griping and constipation. The morning of the attack there was dizziness and weakness of the limbs, with a feeling of exhaustion. This was May 5, 1891. She lay on the bed to rest, and at 3 o'clock P.M. on attempting to arise she found that she was unable to do so.

When I saw her some hours later I found partial paralysis of the entire right side, including the right side of the face. She could move the arm and leg, but with great difficulty. Speech was very much affected, so that it was difficult to understand her, and it tired her to try to talk.

From that date (May 5th) to this (May 27th) she has been under daily observation, without much change, except that she is now improved both as to motion of the limbs and in power of speech. At times the mind has been wandering. The treatment has consisted of calomel to move the bowels, bromide to allay nervousness, and suppositories of ergotin (0.6 each) three times a day. The calomel produced slight ptyalism and diarrhea. She is now improving in all her symptoms.

In this case, in the absence of other cause, and from experience with the previous cases, I have thought there might be an etiological relation with the prevailing epidemic. The difficulty of speech seemed to be due to two factors: 1. Aphasia from the effect of the brain lesion; and 2. The paralysis of the tongue and pharyngeal muscles.

CASE IV. *Progressive coma and death following the grip.*—Mrs. F., aged eighty years, was a well-preserved woman for her age, and, until the past three years, in fairly good health. During this

latter period she had been suffering from cerebral attacks, with slight paralyses, due apparently to congestion of the brain and effusion. These attacks were usually provoked by indigestion and constipation, and were relieved by purging and bromides. On March 22, 1891, Mrs. F. had sore-throat, fever, headache, and pains in the limbs. There was no tonsillitis. At first, and subsequently, bronchitis developed broncho-pneumonia. The cough caused great distress and loss of rest. This attack of broncho-pneumonia ran a course of ten days to resolution, but the patient, instead of rallying to recovery, fell into a stupor, from which at first she was easily roused, but day by day it gradually deepened into complete coma, and she died April 29, 1891.

In this case the coma seemed to be caused by gradual serous effusion into the brain, and was undoubtedly a direct result of the illness caused by the grip.

CASE V. *Rheumatism and rheumatic meningitis following the grip.*—Miss G., about forty-five years of age, had enjoyed good general health. She had an attack of grip the latter part of March, from which she appeared to have recovered. On April 24, 1891, she was attacked with violent pains in all her joints, so that when moved or touched she screamed. There was no fever, no swelling, and no redness of the affected joints. On April 27th the temperature was 102.5°, and there was swelling, redness and pain in the finger-joints of both hands. On April 28th the fever was the same, with swelling of ankles and wrists. April 29th the thermometer registered 100.6°, and there was no relief from pain. She was at times delirious, with violent headache. From this time on the delirium increased, with retention of urine and constipation. Symptoms of meningitis were marked. On May 9th she was sent to Garfield Hospital, where she died three days later of meningitis.

I have reported these cases as following the "grip," and probably sustaining to that disease a causative relation. My reasons for this belief are:

1st. The sequence. In none of the cases was there any other apparent cause.

2d. The "grip" is a disease attended with well-marked symptoms pointing to derangement of the nerve-centers. This is shown by severe and characteristic pains which, during the acute stage, are its most pronounced symptoms, and also by the great nervous prostration that in so many cases follows. This has been universally observed, and has sometimes been extreme.

In one case, a lady forty-five years old, all her life exceptionally well and strong, had a moderately severe form of the disease, and apparently recovered. I had stopped visiting her, when a few days later she sent for me. I found her very much alarmed. She informed me that she knew she was going to die—that she could not walk across the room. I reassured her, prescribed tonics, and she ultimately recovered, but for several weeks she was not able to return to her duties as a department clerk.

One of the cases, that of rheumatic meningitis, deserves special mention. It seemed clearly due to the grip, and the symptoms, in the ordinary sense of the term, were not those of well-defined rheumatism. For several days the violent pains in the joints continued without any sign of inflammation, redness or swelling. When these did appear they were most marked in the finger-joints, hardly at all in the larger joints, although the pain continued. When the meningitis set in the joint-symptoms ceased. It seemed as if some morbid germ, or germ-product, were here at work.

A recent writer (Adenot, *New York Med. Record*, May 9, 1891) gives a list of pathological germs found in meningitis. These are the intercellular diplococcus of Weichselbaum; the pneumococcus of Fränkel; the pneumo-bacillus of Friedlander; streptococcus pyogenes; staphylococcus pyogenes; typhoid bacillus of Neumann and Schaeffer; and the pseudo typhoid bacillus of Roux.

I mention these in detail, because it seems that if so many different pathological germs are capable of causing meningitis, so also may the undiscovered germ of this epidemic malady. In Case IV., which I have called "progressive coma," there was no *apoplexy*, but evidently a gradual effusion, probably of serum, that first produced sopor, then stupor, and finally complete coma, which continued until death. All this followed immediately upon the grip. In this case also there had been previous disease of the brain.

As to the location of hemorrhage in the cases of apoplexy, it was on the left side in all three cases, and in the cerebrum or central ganglia. This was shown by the right-sided paralysis, and by the paralysis of the face being upon the same side. I have said little of treatment, because the treatment of "grip" is not under consideration, and because in the treatment of the apoplexy there was nothing out of the usual course.

There were no autopsies.

DEFECTS OF THE OCULAR MUSCLES.

BY JOHN S. STEWART, M.D.,
OF PHILADELPHIA.

AFFECTIONS of the ocular muscles occupy a position of no small importance in the study of the eye, its defects and diseases. Especially is this true since the relations of ocular conditions to disturbances of the nervous system and general bodily health have come to be appreciated.

A somewhat complicated system of ocular muscles adjusts the two eyes in such a manner as to

obtain *binocular* vision, the separate retinal images making but a single mental impression; but it is only when the adjustment of these muscles is perfect, and when corresponding portions of the two retinæ are thus made to receive the two images that single vision can be maintained. With every new adjustment of the eyes, either for nearer objects or for more distant ones, new movements and different degrees of tension are thrown on these muscles, and the response must be instantaneous. Such ever-changing and extremely nicely associated actions are demanded in no other part of the organism. It is, therefore, not surprising that this exacting service—when difficulties in its performance are encountered—should make excessive demands on the stock of nervous energy of the individual, or give rise to discomfort in the eyes, and even in other parts of the body.

Defects of the ocular muscles may be divided into two classes, viz.:

1. Overaction of one or more of the muscles.
2. Weakness (insufficiency), or paralysis of one or more of the muscles.

Of course, it is quite possible for these two abnormal conditions to coexist and thus exaggerate, while at the same time making more manifest, the defectiveness. The character of the symptoms manifested depends both on the degree of the defect and on the ability to overcome it by extra effort on the part of the eye-muscles. Thus, if there be only slight weakness of one muscle and but little tendency to overaction of its opponent, the eyes can be kept with their axes practically parallel. The only symptoms then may be fatigue on use of the eyes, irritation about the eyes themselves, or pain referred to various portions of the head and body. But, apart from the suffering thus occasioned, the eyes may seem strong and good, especially if the sight does not happen to be defective, so that suspicions are likely to be centered on other parts of the organism where some of the discomforts may have been manifested through reflex action of the nervous system.

The fact cannot be too strongly emphasized that slight defects of this character give rise to more suffering from the use of the eyes, to greater discomforts in other parts of the body, and to more serious disturbance of the nervous system, than do the highest degrees either of overaction or of insufficiency. This may seem strange, but the reason is not hard to find. For, when the defect is of such degree that the two eyes can no longer be kept with their axes parallel, or as nearly so as may be required for single vision, one or the other of them will be observed to deviate either inward, outward, or in a vertical direction. As a result we have some one of the forms of "squint," or *strabismus*.

One of two results must happen when the eyes can no longer be accurately directed toward the same object—either there will be double vision, or the retinal image in one eye will be suppressed. Should the first of these results happen the confusion and annoyance from seeing everything "double" will be very great; but the suppression of one image most frequently occurs, and the individual then uses only one eye at a time. Sooner or later, however, one of the eyes is likely to be called on to perform every act of vision, and the other is then in danger of becoming permanently disabled from want of use.

It must not be forgotten, however, that differences in the refraction of the two eyes often cause unconscious choice of the better organ for vision and consequent deviation, either outward or inward, of the other and less perfect one. This is likely to be the case when one eye is perfect, or nearly so, and the other is either highly hypermetropic, myopic, or astigmatic—or, when one eye is hypermetropic and the other myopic (anisometropia); when the latter anomaly exists one eye may be habitually used only for distant objects and the other only for those near by.

The intimate relation existing between the various forms of squint and the different errors of refraction is too little understood even by the intelligent and educated, and a brief consideration of the subject may be useful.

Strange as it must seem, squint is still by many ascribed to imitation, to teething, to fright, and to innumerable other conditions which can have nothing to do with it. Children have repeatedly been punished for squinting, when it would have been as reasonable and effective to punish them for having blue eyes instead of brown ones. Therefore, it cannot be too generally known that children with a certain degree of hypermetropia must squint by a necessity of their organization. It is the only means by which they can overcome the consequences of their ocular defect. On the other hand, those that have differently formed eyes have no cause or temptation to squint, and would probably be unable to do so even by any amount of carefully directed effort. About 90 per cent. of all the cases of convergent squint are directly produced by hypermetropia; yet the hypermetropic persons who squint are probably not more than two-thirds of the whole number. The rationale of this form of squint is that when a short-eyed (hypermetropic) child first begins to employ his vision carefully—at three or four years of age—it is necessary for him to exert a high degree of accommodation. This is more readily done if it is associated with convergence-effort, hence the latter becomes as habitual as the former. The *internal recti* muscles being thus continually exercised increase in strength, and it

eventually happens, by reason of their increased power and their frequent or continuous exertion, that they, like the muscles of accommodation, fall into a sort of spasm, so that the habitual and resting position of the eyes comes to be one of convergence. After a short time this convergence cannot be relaxed, and double vision of all objects must then be produced, unless one of the eyes rolls still further inward so that its image, having fallen upon a comparatively insensitive portion of the retina, may be neglected or suppressed by the brain. The intolerable inconvenience of double vision is thus generally removed by the act of squinting.

At first the eyes are usually affected alternately; but after awhile, either because one eye has better vision than the other, or because from some inequality between the muscles one is more easily rotated than the other, we see, as a rule, that one is always made the working eye and the other always the squinting eye.

The reason why some hypermetropic persons squint and others do not appears to depend mainly on the closeness or laxity of the tie between the functions of *accommodation* and *convergence*.

Divergent strabismus is much less common than the convergent variety, and is usually dependent on myopia, although it may occur in some cases of high hypermetropia or astigmatism. Very frequently it is due either to insufficiency or to paralysis of the internal recti muscles. In myopia the eyeball is elongated, and its range of movement diminished, so that the extreme convergence that is necessary to enable the patient to see objects within his range of vision tires out the inner recti muscles, and, for relief from the distress, one of them gives way, and the eye deviates outward. Sometimes the deviation takes place only after the individual has been working for some time and the eyes feel fatigued; in others it is only noticeable in looking at objects beyond the far point. Soon, however, the squint becomes continuous, and usually tends to increase. As soon as this occurs, whatever the variety of the squint, the vision of the deviating eye begins to undergo progressive impairment.

Therefore, the strabismus should be removed or overcome without delay; and it is obvious that treatment must be directed first to correction of every discoverable error of refraction, so as to bring the accommodation-effort and the convergence-effort into harmony. In the case of children in whom the squint is of low degree and has existed only a short time, the dangerous disfigurement can usually be removed by the continuous wearing of proper glasses. From the records of my own practice I judge that fully 75 per cent. of the strabismus occurring in the young can be overcome by careful measurement and correction of the refractive error. In a considerable number of the cases that I have treated with glasses alone this result has proved to be a permanent one. If the vision of the two eyes be different, that in the squinting one being more or less impaired, it is oftentimes of service to exercise the less perfect eye by itself for a certain fixed time daily, and it will usually be found that visual improvement progresses steadily until, after perhaps several months of this exercise and training, the powers of the two eyes become almost, if not altogether, equal.

But when the glasses have been worn a month or more without improvement, or when the squint is of very high degree, tenotomy must be performed, and so long as the vision of each eye is fairly good a perfect result can be expected if the glasses be worn in addition. If, on the contrary, the operation has been too long delayed until the vision of the squinting eye and the tone of its muscles have alike suffered, only a partial correction of the disfigurement can be hoped for. But for the sake of both vision and appearance every squint dependent on error of refraction, and not overcome by wearing of the proper glasses, should be subjected to operation.

Thus far our attention has been directed to defects of the ocular muscles unmistakably manifesting themselves in the eyes. But there is even a more numerous class of cases of this character in which the symptoms, in addition to being local, may manifest themselves to a considerable degree in parts of the body seemingly remote from the eyes. *Heterophoria* is the term now generally employed to describe those ocular conditions formerly very imperfectly and oftentimes quite incorrectly known as *insufficiencies*. But this class of muscular faults differs so widely from those at present under consideration that it has been thought best to give them separate consideration. Accordingly, the writer's experience in the treatment of the various forms of heterophoria will be given in another paper.

1537 CHESTNUT STREET.

TREATMENT OF COMMON COLDS IN CHILDREN.

BY HERMAN B. ALLYN, M.D.,
INSTRUCTOR IN PHYSICAL DIAGNOSIS IN THE UNIVERSITY OF PENNSYLVANIA; CHIEF OF THE DISPENSARY FOR DISEASES OF WOMEN AND CHILDREN, ST. JOSEPH'S HOSPITAL.

THE affection commonly called a cold consists, in its mild form, in a congestion of the mucous membranes of the respiratory tract, attended first with an outpouring of serum and subsequently of mucus and muco-pus. The cold may be limited to any part of the respiratory tract, but the nose and naso-pharynx are the portions generally involved. Frequently the process begins in the nose or throat, but, when the patient comes under observation, the bronchial mucous membrane is most affected. The

stage of congestion is of brief duration, especially in those who are more or less subject to colds; hence, when seen by the physician, the affection consists in an acute or subacute catarrh of the mucous membranes involved.

The nature of the process, as seen in children, does not differ from that in adults. Children are, however, more prone than adults to develop bronchial catarrh, and the nasal catarrh is, in the former, more apt to become subacute and even chronic. The chief reason for the latter fact is doubtless to be found in the relative helplessness of children, who cannot cleanse their noses properly, and are often neglected by their parents. The spectacle of a neglected child of poor parents, with a disgusting muco-purulent discharge from the nose, is too common to occasion much comment. Another reason for the preponderance of these catarrhs in children is the difficulty attending treatment.

For a cold in the congestive stage, the child may be given a hot bath and then be put to bed, well wrapped in blankets, to encourage free perspiration. Veratrum viride and aconite may also be of distinct service; one or the other should be given in doses suited to the age of the patient to produce the effect desired. The atmosphere of the room need not be above 70° F., but while the mucous membranes are dry and parched a certain degree of moisture will be grateful to the little patient. This moisture can be provided by having a steaming teakettle in the room, or by keeping a pan filled with water on the stove. If there should be no stove in the room, a gas-jet may be utilized, first suspending over it on top of the shade a sheet of wire, such as is sometimes used to avoid the scorching of a table-cloth by a hot coffee-pot. The best device for use in the sick-room is a Bunsen burner made with a flat, circular top, two inches in diameter. The gas-jets are made to emerge horizontally in a radiating manner beneath this top. The whole Bunsen burner can be screwed on an ordinary bracket in place of the customary burner. On this burner a tin cup or other small vessel can be placed, and the room quickly filled with vapor, medicated or not, as desired.

In the first and second stages of a nasal catarrh, menthol is an excellent remedy. All are familiar with Cushman's menthol inhaler, which is an admirable apparatus for adults; its employment, however, cannot be made effective in the case of children; while with infants its use is out of the question. For the benefit of these little patients, therefore, I am in the habit of ordering menthol in crystals, having about a third or half of a teaspoonful placed in water and heated gently until it begins to steam. The menthol vapor is liberated very rapidly. One must regulate the quantity of menthol and water in accordance with the size of the room, especially its height, and not keep doors and windows open unless the vapor of the menthol should become too pungent. As the menthol vapor is irritating to the mucous membrane of the eye, I prefer to use it in the sleeping-room of the child at night after it is asleep.

In the second stage of acute rhinitis, benefit will be obtained from the local use of a weak solution of salt in warm water, say about a fourth of a teaspoonful of salt, or even less, to a tumbler of water. The salt-and-water solution is so soothing that children who get over the first fright at having any liquid put into the nostrils, no longer make any objection. I have found a medicine-dropper the most serviceable instrument for instilling the lotion. Thorough cleansing of the nasal passages cannot, of course, be performed in this way, but, on the other hand, there is less risk of causing an acute inflammation of the middle ear than if a syringe were used. At a later stage in the catarrhal process, the "alkaline and antiseptic" tablets, prepared according to a formula by Seiler, are better than simple salt and water. Half of one of the tablets should be crushed and then dissolved in a third of a glass of warm water. Not infrequently the resulting solution is too irritating; when this is the case a little salt should be added to it. Before the solution is introduced, the nasal passages should, as thoroughly as possible, be freed of secretion. The solution should be employed several times a day. An extemporaneous substitute for the tablets can be prepared by adding to a weak salt-water solution minute quantities of soda and borax. These are especially indicated when there is a tendency for the secretion to become thick and purulent and for crusts to form. I have found a five or ten per cent. solution of menthol in almond oil, applied to the nostrils with a pledget of cotton or a camel's-hair brush, also very helpful. The local applications, with inhalations of menthol at night, as a rule, soon effect a cure in a subacute rhinitis.

When a child is disposed to "catch cold" easily and frequently, there is often a strumous habit present, and the tonsils are often enlarged. In such cases cod-liver oil, begun in the autumn and taken until the following spring, effects a great improvement. I have seen no good results from the syrup of iodide of iron, but the syrup of hydriodic acid has seemed to do good.

As a rule, before a cold subsides, there is more or less bronchitis, from extension of the catarrhal process. Generally only the larger and middle-sized tubes are affected. Local remedies are here of great value. In infants and in very young children, a stimulating liniment containing oil of amber, camphor and oil of turpentine, with soap liniment as a

vehicle, is very serviceable. Poultices are, as a rule, not needed in mild cases of bronchitis occurring in the course of "colds." They can, however, be of great service. In using them in these cases I prefer to have them applied at night. They should be large enough to cover the entire chest, anteriorly and posteriorly. Strips of tape passed over the shoulders and fastened with safety-pins to the muslin of the poultice will aid in keeping the poultice in place. The poultices should be thin, and preferably made of flaxseed meal, with the addition of one part of good mustard to 16 or 20 parts of the flaxseed, according to the age of the child. The proportion of mustard should be small, as it is desirable that the child should sleep the entire night in one jacket-poultice.

When the flaxseed and mustard poultices are made up with glycerin and white of egg, a larger proportion of mustard can be incorporated, and the poultices can also be kept on longer, without risk of blistering the patient.

For older children, painting the chest gently in the morning with iodine once a day, until the skin becomes somewhat tender, is better than the application of liniments or poultices.

In these cases of mild bronchitis, inhalations of oil of turpentine, or, still better, oil of eucalyptus, are decidedly helpful. In the houses of the poor they can be given by keeping the patient in the kitchen and having on the stove or range an open vessel of water containing about a teaspoonful of the oil to a pint of water. It may be desirable to have the patient sleep in the kitchen at night.

Of internal remedies, nothing is better than the remedy almost universally employed—chloride of ammonium. It is best given at intervals of an hour or two, in doses appropriate to the age of the patient. When it has seemed necessary, I have sometimes induced the mother to take the chloride for the benefit of the nursing infant.

It is true that, so far as life is concerned, the majority of these cases would not terminate seriously if no treatment were employed. But it cannot be denied that in some cases a grave catarrhal pneumonia would be the ultimate result of a neglected cold, and in many others neglect to treat the case would lay the foundation for an obstinate chronic naso-pharyngeal catarrh, with all its unpleasant consequences. We cannot, therefore, afford to be indifferent to the treatment of these common colds.

310 NORTH 40TH STREET.

Francis May Dickinson, M.B. Lond., has been appointed anesthetizer at the Alexandra Hospital for Children with Hip-disease, in London. She is said to be the first woman appointed to such a position in a London hospital, excepting the New Hospital for Women.

FOUR CASES OF TRUE PELVIC ABSCESS.

BY CHARLES P. NOBLE, M.D.,
SURGEON-IN-CHARGE, KENSINGTON HOSPITAL FOR WOMEN, PHILADELPHIA.

DURING the past few years many abdominal surgeons have denied the occurrence of true pelvic abscess, or have admitted it only as a pathological curiosity. These men have permitted themselves to be blinded by their own personal experience, and have so lacked scientific spirit that they have accused other observers, equally worthy of credence, of incompetence. Because they have found pus in the pelvis only in cases of pyosalpinx, abscess of the ovary or purulent peritonitis, they have argued that true pelvic abscess—abscess in the connective tissue of the pelvis—does not occur; that, because they have found pelvic inflammation to be inflammation of the uterine appendages or peritoneum, therefore cellulitis does not occur. They have confused the relative with the absolute.

No one believes more firmly than I that the common form of pelvic inflammation is salpingitis, with peritonitis; and that when pus forms in the pelvis it is usually in the Fallopian tubes, the ovaries or within the peritoneum; yet I know that, as a *puerperal* condition, cellulitis and true pelvic abscess not rarely occur. Four cases of such abscesses have come under my notice. As a non-puerperal condition I have not seen cellulitis or true pelvic abscess, and I know of no evidence that such inflammation occurs, except after traumatism within the pelvis.

As to the relative frequency of true pelvic abscess as compared with the other varieties of accumulations of pus within the pelvis, I believe the former is rare, constituting only a small percentage of cases. I report these cases as a contribution to the subject of pelvic inflammation. In three, the evidence of their true nature is incontestable; in the fourth, it is perfectly satisfactory.

The first two cases have already been reported in full to the Philadelphia Obstetrical Society; so I shall merely refer to them. The first was operated upon by Dr. Longaker, some weeks after labor, Dr. Parish and myself assisting. The belly was opened, the tubes were found healthy, a second incision was made parallel with Poupart's ligament and a large quantity of pus was evacuated. The abscess occupied the left broad ligament and had burrowed between the uterus and bladder into the right broad ligament. Recovery followed.

The second case was operated on by Dr. Wilson, whom I assisted. The operation was similar to the first. The tubes were healthy. As the induration was in the region of the false pelvis, a second incision was made near the anterior superior spine of the ilium. A large quantity of pus was evacuated. Recovery followed.

The third case I saw in consultation with Dr. Himmelwright, March 2, 1890. The history, as given to me by Dr. Himmelwright, is as follows:

The patient had a miscarriage, January 3d, in the second month of pregnancy. One week later, symptoms of pelvic inflammation appeared, and a diagnosis of peritonitis was made. The patient got about by February 1st. After a week, pain was felt in the right inguinal region, and gradually increased in intensity, extending to the lumbar region. After another week (February 15th), she was unable to walk erect and to put her right foot firmly upon the ground, but had to stoop forward. During this time the temperature remained normal and there were no chills. At times the pulse was slightly accelerated. The pain continued to increase, and, on February 27th, a swelling was noticed in the right lumbar region. March 1st, the temperature rose to 101° F., and the pulse to 120, and there were slight chills. March 2d, I saw her. The temperature was normal, the pulse about 90. The right inguinal region was tender, suggesting, indeed, appendicitis, but there were no symptoms to warrant the supposition. A semi-fluctuant swelling was found in the right lumbar region. The next day this swelling had increased, and a hard mass was felt in the right inguinal region, extending as high as the ribs. The swelling in the lumbar region was opened and two or three pints of pus escaped. Introducing my index finger, it passed around the ilium into the iliac fossa. A rubber drainage-tube was introduced, and irrigated daily with a dilute solution of peroxide of hydrogen. For a few days large quantities of pus were discharged. The discharge gradually decreased and the tract rapidly healed—closing from the bottom.

It may be asked: "Why do I claim this as a case of true pelvic abscess?" The abscess was undoubtedly situated in the false pelvis, on the right side. I had my finger in it. The entire absence of bowel-symptoms excludes perityphlitis. The fact that, on examination, the uterus was found movable and the broad ligaments free from exudate—no fixation of the appendages—excludes pyosalpinx. Hence I take it the abscess was due to the breaking down of an infected pelvic gland situated behind the peritoneum, in the right iliac region.

The fourth case was in every way similar to the first. I saw the patient in consultation with Dr. Longaker, five weeks after labor.

The perineum had been torn and was sutured some hours after labor. Septic infection occurred, and for three weeks the temperature ranged between 100° F. and 103° F. During this time there was no pain or distention of the abdomen, or tenderness of the uterine appendages on examination. The perineal wound became inflamed, however, and the stitches were removed. During the fourth week all the symptoms abated. At the beginning of the fifth week the fever increased and tenderness in the left inguinal region became marked. Purulent matter had been discharged *per vaginam*, but whether or not it came from the abscess which had formed was questionable. On examining the patient five weeks after labor, I found her much depressed, in a typhoid condition, with a swelling above the pubes and to the left. Under chloroform, a mass of exudate was felt in the left broad ligament extending between the uterus and bladder, and plainly palpable above the pubes. My diagnosis was true pelvic abscess. I advised median section for an absolute exclusion of complicating pyosalpinx; then a second incision, parallel with Poupart's ligament, to evacuate the abscess. This was done by Dr. Longaker on the following day. The uterus, ovaries and tubes were found healthy; nor was the bladder involved. The omentum was, in places, densely adherent. The abscess was situated beneath the broad ligament and extended upward, behind and two inches above the ramus of the pubes. It contained about six ounces of thick pus, which was evacuated by an incision in the left inguinal region, directly above Poupart's ligament. As there was considerable hemorrhage, a glass drainage-tube was introduced into the median incision and a rubber tube into the lateral. The ultimate recovery was perfect.

The report of these cases simply confirms what has long been known, namely, that as a puerperal condition true pelvic abscess does occur.

2134 HANCOCK STREET.

CLINICAL MEMORANDUM.

THE ROLLER BANDAGE FOR THE PAINS OF TABES DORSALIS.

BY JOSEPH LEIDY, M.D.,
OF PHILADELPHIA.

THIS note is for the purpose of drawing attention to the results of a simple method for the relief of pain during the course of spinal disease, and especially tabes dorsalis.

Warmth, in the form of the warm bath, has long been recognized as of considerable utility in the treatment of this symptom.

The writer has frequently observed the relief afforded by the firm application of a roller bandage in the spasmodic and painful conditions so common in the extremities following traumatism. It occurred to him that the application of such a bandage (flannel or hose) to the part the seat of pain in locomotor ataxia might be of some service in mitigating the suffering. He found that the firm application of a bandage (flannel) from the toes to the upper third of the thigh was attended with great relief. During the past six months this method of treatment has been employed with most encouraging results. For the girdle pains a bandage, similar to the abdominal binder, firmly applied at the level of the abnormal sensations, afforded almost instant relief. The cases under observation had been treated with galvanism, with absolute rest, and the usual therapeutic measures, the majority of which had failed. The usefulness of this method depends principally upon the pressure and warmth that the bandage affords, combined with rest. It is worthy of further trial, if only as a substitute for morphia. In one case

the removal of the chest-binder was in several hours followed by a return of the girdle sensations. Two other patients invariably suffer a return of pain in the lower extremity on the removal of the bandage. In suitable cases the elastic stocking may, with advantage, be substituted for the bandage, as it does not interfere with locomotion.

The application of a roller bandage about the seat of pain was equally useful in several instances in which the area of pain was localized.

The method of treatment indicated will, I trust, commend itself for its simplicity, with the advantage of acting as a substitute for drugs.

237 SOUTH 13TH ST.

ORIGINAL LECTURE.

THE HEART: ITS MURMURS, THEIR DIAGNOSIS AND TREATMENT, AND THE ACTION OF THE CARDIANTS AS A CLASS.[1]

BY WILLIAM HENRY PORTER, M.D.,
PROFESSOR OF CLINICAL MEDICINE AND PATHOLOGY IN THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

LECTURE IV.

GENTLEMEN: At our last lecture we finished the discussion of alcohol; to-day we shall consider digitalis and some of the other drugs that are of avail in treating cardiac lesions.

Probably there is no single drug that has received so much attention as *digitalis*, and even now there is a wide difference of opinion as to its action and true therapeutic value. Much of this doubt, however, is removed, and the action of the remedy made plain by a thorough knowledge of the chemical composition of digitalis. Then, by keeping clearly in mind the physiological laws that govern the animal economy, and carefully noting the changes that take place under the influence of digitalis, much that has heretofore been vague and uncertain becomes positive, and the action of the drug sharply defined.

Another important reason for many of the incomplete and contradictory statements in connection with digitalis —in fact, with most drugs, and especially when the deductions are based upon clinical evidence—is furnished by the fact that frequently conclusions are arrived at when two or more drugs of a similar, and sometimes even of a dissimilar, character are simultaneously administered. As a natural sequence, the evidence is worthless, for under such circumstances no human mind is able to decide to which drug justly belongs the credit, nor how much the action of one drug alters or modifies that of another. The correct and sure way to develop clinical deductions of real value is to administer one drug at a time to a large number of cases of similar character, and under as nearly as possible the same conditions. Then the drug under study should be continued in increasing doses for a period long enough to make certain that the system has been fully brought under its influence, and that the physiological limit has been reached and exceeded. In this way two distinct results are obtained: the physiological action of the drug is determined, and its toxic symptoms are clearly defined. Such evidence, together with that derived from experiments upon the lower animals, and with an accurate knowledge of the physiological laws of the body, enables us to obtain results almost absolute in nature. Such knowledge permits us to say exactly what can be accomplished by the internal administration of a single drug under given circumstances, and raises therapeutics from empiricism to an exact science.

After learning the actions of individual drugs, we have a rational basis upon which to combine to advantage in a single formula two or more remedies; thus intelligently united, they can often be administered with great benefit to the patient.

On this point I have always with profit remembered the teaching of Professor Edward Curtis, which practically was: "Never make a general contribution-box or postoffice of a patient's stomach by turning into it all the drugs at hand, hoping, perchance, to satisfactorily combat his ills with some of the agents used, but, rather, first accurately learn the physiological actions of the drugs to be administered; then give them with a definite and fixed purpose, and if the desired effect is not forthcoming, find out the trouble with the physiological mechanism of the patient, and do not condemn the drugs wholesale because the expected result was not at once obtained." It has always seemed to me that if we only more closely followed this admirable rule in using old and common drugs until thoroughly familiar with their full powers, rather than to rush madly after new and untried remedies, hoping in or through them to find specifics with which to combat complex and multitudinous abnormal physiological problems, our efforts would be better rewarded in the much more exact and satisfactory results obtained for our patients.

But let us return to the composition of digitalis. By reference to our table of cardiants,[1] we find that digitalis is quite a complex body, containing chemically five substances, four of which have been formulated. You further notice that these substances are composed of the elements carbon, hydrogen and oxygen, combined in varying atomic proportions. Most of them are classed as glucosides, because by boiling with acids or other agents they can be made to take up a molecule of water and be converted into glucose. Within the system it is quite probable that they are oxidized, forming compounds or by-products resembling alcohol, and are finally converted into and eliminated from the system as carbon dioxide and water. While passing through this transitional process, they evolve heat and energy, and stimulate the nervous mechanism and functions of the body with varying degrees of intensity.

Drugs of this chemical composition, as well as foodstuffs of an analogous nature, are best called CHO compounds, for by using this term no confusion can arise as to the character of the substance administered, and the chemical elements entering into its constitution are sharply defined, even though the exact atomicity of the drug is not given.

You will remember that in studying digestion and assimilation, and the results obtained by the use of alcohol, it was shown that there is a common tendency on the part of the physiological economy in dealing with

[1] A series of lectures delivered at the New York Post-Graduate Medical School and Hospital.

[1] THE MEDICAL NEWS, July 25, 1891, p. 99.

these CHO substances to oxidize or split them up into compounds or by-products resembling alcohol, if that had not already been accomplished outside the body, as is the case when starch and sugar are first converted into alcohol before being introduced into the system, and ultimately to transform them into the final or excrementitious products—carbon dioxide and water. In some instances this result is quickly accomplished, while in others a considerable lapse of time may intervene before the bodies are completely changed. In all instances, however, while they are passing through this cycle of transformation to reach the final products to be eliminated by the excretory organs, they are continuously evolving heat and energy. This development of heat and energy and the consequent results, in some way stimulate the nervous system, and through it the functions of the body are excited to greater activity, or depressed below the normal standard. Whether these changes are due directly to the action of a specific drug *per se*, or result from a disturbance in the general body-oxidization and the development out of the proteid bodies of various intermediate nitrogenous compounds, has not as yet been fully made out by the physiological chemist. In the case of digitalis, however, the latter factor seems to be sustained, for when digitalis is administered in full doses, the proportion of uric acid in the urine is augmented, while the percentage of urea often falls, an evidence that there is a marked tendency on the part of the system, when under the influence of the drug, to imperfectly oxidize proteids. The diminished excretion of urea could be explained by the increased rapidity of the renal circulation, but in such a case the excretion of uric acid ought also to be diminished; but as this is not the fact, the condition must be dependent upon disturbed oxidization.

In diseased conditions, stimulation by digitalis, within physiological limits or temporarily, may be of service to the animal economy, in the same way as is alcohol, by calling into action the reserve force of the system. If, at the same time that this increased vital activity is developed, the requisite quantity of proteids can be digested and assimilated to fully compensate for this excessive work, a positively improved condition may be the final result. But, owing to the high arterial tension induced by the action of digitalis, this desirable nutritive condition cannot be permanently maintained. For we have already found that the nutritive interchange between the blood and perivascular tissues is effected exclusively through the arterial capillaries.[1] With this unduly high arterial tension, the blood is sent through this vascular area into the venous capillaries and veins so rapidly that the nutritive interchanges are very greatly impeded or totally abolished. Consequently, if digitalis is given in large quantities or continuously it prevents the nutritive fluids and pabulum from gaining access to the perivascular tissues and system, but, at the same time, it augments vital action, interrupts proteid metabolism, both by disturbing oxidization and by these marked changes in the vascular phenomena.

With these fundamental principles well in mind, we are in a position to state the physiological and therapeutic value of digitalis.

[1] THE MEDICAL NEWS, July 25, 1891, p. 98.

Before considering the action of digitalis in detail, it will be well to study the active principles a little more closely, if we wish to understand accurately the physiological and therapeutic results to be obtained from its use. We find that digitalis contains four decidedly active principles, three of which are said to have almost identically the same action, while the fourth, digitonin, has an effect almost opposite, poisoning and weakening the muscular activity of the heart and lowering the arterial tension.

Therefore, in using powdered digitalis, one of its contained elements is opposing the action of another set. The same holds true when the infusion is used, because the digitonin is freely soluble in water, but the digitoxin is insoluble and the digitalin and digitalein are only sparingly soluble in water. But with the tincture, the reverse is true; digitoxin, the most active stimulating principle, is freely soluble; digitalin and digitalein are sparingly soluble, while digitonin is insoluble in alcohol. Consequently, when the tincture is used, and especially a tincture made from the fresh leaves, we have in solution the three elements that act alike and comparatively little or none of the opposing agent, digitonin, to counteract the action of the other three. Therefore, in speaking of digitalis and its actions, the tincture is the preparation to be used.

Briefly and concisely stated, digitalis shortens the systole, prolongs the diastole, increases the intrinsic muscular contractility of the heart, poisons the muscle protoplasm, heightens arterial tension, thereby reducing the nutritive interchange between the blood and the perivascular tissues, at the same time primarily lowering the blood-pressure in the splenic arcade and renal vessels. The well-known physiological law that when the heart's action is augmented and the general arterial tension heightened, the blood-pressure in the splenic arcade is lowered, and *vice versa*, enables us to clearly explain the diuretic action of digitalis. It also perfectly elucidates the reason why digitalis acts so well as a diuretic in some instances and entirely fails in others.

Cognizant of these physiological laws, we find that when digitalis is given to a healthy individual, the heart's action is slightly augmented and the general blood-pressure is increased, while that of the splenic arcade is decidedly lowered. Following upon these vascular changes, and as a necessary sequence, an abnormally large volume of blood passes through the vascular areas of the kidneys; and owing to the generally increased blood-pressure, the general rapidity of the blood-current is increased. Now, if there is no impediment to the escape of venous blood from the renal veins, the blood simply flows more rapidly through the organ, so that the augmented volume is fully accommodated. The increased rapidity of the current of blood in the renal vessels allows much less time for each volume of blood to be in contact with the bases of the epithelial elements; consequently, a smaller quantity of effete material is taken up from the blood-stream by the vital action of the epithelial cells and necessarily a proportionately smaller quantity of waste matter is discharged by them into the lumen of the uriniferous tubules. The same is true for the transit of fluid through the walls of the capillary vessels forming the Malpighian tufts. In this way the increased volume of blood is counterbalanced by the greater

rapidity of the blood-current; and the physiological excretory function of the renal gland practically remains unchanged.

If, on the other hand, digitalis is administered under pathological conditions in which the action of the heart is feeble, the general arterial tension low, and an obstruction to the exit of blood from the renal vessels exists—as is the case in a general venous engorgement from any cause, or better in the parenchymatous lesions of the kidneys, in which the secondary or venous capillaries of the organ are obstructed by the pressure exerted by the swollen epithelial cells lining the convoluted and straight tubules—an entirely different result is obtained. Now, the digitalis increases the power of the heart's action, heightens arterial tension and raises the blood-pressure to the normal standard or above, and greatly increases the volumetric tension in the splenic arcade and in the renal arteries; but, owing to the venous obstruction existing beyond or within the kidney, the blood cannot be accommodated, so that it passes more rapidly through the renal vessels. As a result, the increased volumetric pressure brought to bear upon the capillaries constituting the Malpighian tufts is enormously increased and one of four things must occur: *First*, the water of the blood may find its way into the uriniferous tubules; *second*, the venous obstruction may be overcome and the blood more rapidly carried through the kidneys; *third*, the vessels forming the Malpighian capillaries may rupture and allow the blood to pass out into the uriniferous tubules to be discharged with the urine; *fourth*, the renal circulation may be arrested. The first and second conditions most commonly result. First the water of the blood passes off through the Malpighian tufts into the uriniferous tubules, thus diminishing the volume of blood to be forced through the secondary plexuses of the kidneys; a little later the increased volumetric pressure, which has been somewhat reduced by the escape of the water, causes the current of blood to move more rapidly through the secondary capillary plexuses in the kidneys. As a result, a large volume of blood moves out of and through the kidneys in a given space of time, more blood is brought in relation with the renal cells and an increased quantity of effete material is taken up from the blood by the physiological action of the epithelial cells lining the uriniferous tubules, and discharged into the lumen of the excretory ducts. Thus, by converting an almost stagnant renal circulation into one of normal or even augmented activity, the elimination of both the watery and solid ingredients of the urine is greatly increased and the body protected from the poisonous effects that must follow their retention in the system.

From this it naturally follows that when the heart's action is fully up to the normal standard, and the renal circulation unobstructed, digitalis will simply drive the blood through the kidneys more rapidly, and will not produce diuresis. In diseased conditions in which there is no venous obstruction, if any effect is produced upon the renal secretion the elimination of the solids will be diminished. Digitalis first stimulates and then weakens the heart's action; by the high tension produced the nutritive system is physiologically starved.

Considering the heart simply as a mechanical pump, wholly independent of the physiological laws governing its movements and nutritive vitality, we ought to be able to favorably influence its action by the internal administration of digitalis, especially if there are organic changes in the valves. This line of reasoning, however, is inconsistent, because it assumes a physiological action for the drug and a mechanical action for the heart, independently of the normal laws governing the movements of the organ. This one-sided method of reasoning is largely responsible for the differences of opinion and the variable results obtained from the internal use of digitalis. On the other hand, if we keep clearly in mind the physiological and mechanical laws associated with the heart's action and the drugs acting upon the organ, accurate deductions can be made.

Beginning with the mitral lesions, we find, from a purely mechanical standpoint, that when digitalis is administered in a case of mitral stenosis, the mechanical defect is somewhat compensated for by a shortening of the systole and prolongation of the diastole, thus affording the left auricle more time to force blood into the ventricle. If, now, the force of the systole is augmented, in addition to the shortening of its duration, a larger volume of blood will be sent into the aorta; if the arterial tension remained normal, the general nutritive condition of the system would be improved.

In case of mitral incompetency, the time during which regurgitation can occur is shortened; and here, as in the stenosis, if the force of the systole is augmented, in addition to the shortening of its duration, then the same improved condition of the general circulation and nutrition is established. If, at this point, heightened arterial tension and increased activity of circulation would establish a more perfect and effectual nutritive condition—as Dr. Fothergill assumed that it did—digitalis would be the remedy *par excellence* in the treatment of organic mitral affections; but, unfortunately, physiology teaches the reverse: nutritive interchange is not instantaneously effected between the blood and the perivascular tissues, but depends upon a somewhat slow flow of a large volume of blood through the arterial capillaries. When the blood has passed into the intermediate and venous capillary systems and on into the veins, nutritive activity is practically at an end; with high tension and active circulation, nutrition is reduced to the minimum or totally abolished.

Clinically, this law is fully sustained, for it is a well-known fact that, when high tension is developed that cannot be overcome, death rapidly ensues.

These physiological vascular and nutritive laws clearly explain the so-called cumulative effects of digitalis; they also elucidate the good effect that follows its temporary use, and the bad results so frequently observed when the drug is taken continuously, as well as the empirical statement, so commonly found in text-books, that the administration of digitalis must be intermittent and not continuous.

While digitalis mechanically improves the conditions associated with mitral lesions, by heightening the tension in the aorta and coronary arteries it at the same time rapidly lowers the nutritive supply of the cardiac muscle; the blood is forced through the arterial capillaries of the heart so rapidly that sufficient time is not allowed for the nutritive pabulum to be taken up by the perivascular structures. As digitalis is a non-nutritive

compound capable of calling into action the inherent and vital forces of the cardiac muscle, it will of necessity temporarily improve the mechanical action of the heart and cause it to accomplish more work, as a result of which the histological integrity of the muscular elements is impaired; at the same time the drug lowers the nutritive supply and causes progressive deterioration of the muscular tone.

Consequently, when digitalis is given, it becomes almost impossible to develop a truly physiological and compensatory hypertrophy, and as the attainment of this is the chief object in the treatment of all cardiac affections in which the mechanical action is defective, the use of this drug or any other of similar nature is constantly thwarting our endeavors. With a fully developed and sustained cardiac hypertrophy sufficient to compensate for the mechanical defect in the valvular apparatus, the condition of the patient is physiologically normal and may continue so for years.

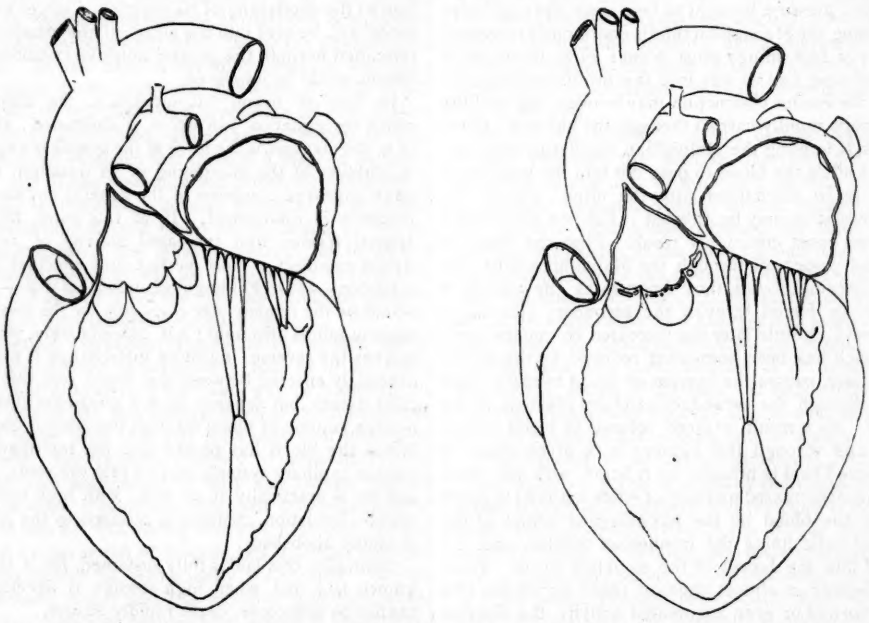
muscle and regulating the rhythm of the heart, this functional derangement can be rapidly dissipated and the action of the heart and the valvular sounds restored to the normal.

The slowing of the heart's action under the influence of digitalis appears largely due to the increased resistance to the onflowing blood by reason of the unduly high arterial tension, and later, to the impaired nutritive power of the cardiac muscle, rather than by a direct action of the drug upon the organ or its nervous mechanism.

Viewed in this light, digitalis can only be of temporary service; its continuous administration in doses sufficient to produce the decided action of the drug must of necessity be followed by harm.

As the weight of clinical, experimental, physiological and theoretical evidence all conclusively show that digitalis damages the heart-muscle by cutting off its nutritive supply, and that it has little or no tendency to

a FIG. 1. *b*



a. Normal heart, showing perfect closure of the mitral valve, and normal aortic semilunar valve-segments.

b. Functional derangement, showing imperfect closure of mitral valve, but without organic changes; also, congenital perforations in the aortic semilunar segments.

In the common condition of functional regurgitation at the mitral orifice so well illustrated in Fig. 1 and fully explained in the first lecture[1] on this subject, digitalis, by temporarily increasing the working power of the heart, and, at the same time, still more decidedly impairing the nutritive condition of the cardiac muscle —as already explained—causes the mitral regurgitation to remain stationary or even to progress, and the murmurs are heard with greater intensity. On the other hand, by increasing the nutritive supply of the cardiac

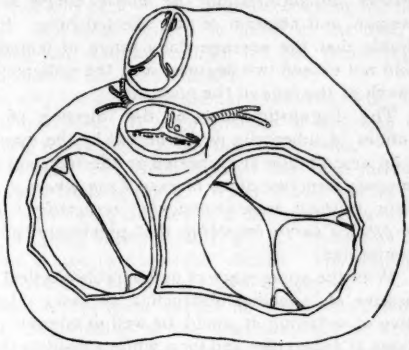
[1] THE MEDICAL NEWS, May 23, 1891, p. 585.

produce or maintain a compensatory hypertrophy of the cardiac muscle, I have ceased to consider or to use digitalis as a cardiac stimulant, and especially as we have so many far more efficient agents.

In aortic lesions there can be no possible excuse for using digitalis. Admitting that digitalis augments the force of the heart, in addition to shortening the systole, and thus enables a larger volume of blood to be thrown into the aorta, the increased arterial tension and the prolonged diastole permit of increased regurgitation. Accompanying this there is the progressive cutting off of the nutritive supply of the heart. Were it not for the

heightened tension produced by digitalis and the consequent diminished nutritive supply to the cardiac muscle, and the increased activity of circulation in the coronary arteries, the drug might be used with advantage in aortic stenosis, but never in aortic incompetency.

FIG. 2.



Illustrating the congenital perforations in the aortic and pulmonary semilunar segments.

Many cases of aortic regurgitation, however, depend upon congenital perforations in the semilunar segments, as illustrated by Fig. 2 and explained in my second lecture on this subject.[1] These defects in the valve-segments often give rise to decided physical signs, and the diagnosis of organic lesions of magnitude—while, in truth, the mechanical leakage is quite small, the condition does not grow worse, and the physiological actions of the heart and circulation are not at all disturbed. In these cases, the administration of digitalis, in moderate doses, appears to strengthen the heart, so long as the administration is intermittent and the dose not large enough to give rise to positively bad effects. In this way it has been conceived that the drug can be used to advantage in aortic regurgitation; but used continuously in case of a truly organic lesion, it has caused not only serious but absolutely fatal results.

I have frequently been asked why it is that, digitalis being such a perfect drug as it is claimed to be, patients are but temporarily improved under its influence, but almost invariably get worse before the heart is gotten into a desirable condition. I trust that this question has been satisfactorily answered and explained by the facts presented in connection with our knowledge concerning digitalis.

MEDICAL PROGRESS.

A Teratological Curiosity.—There has recently been on exhibition in Paris a unique twin-monster, of the class pygopagus. The twin-sisters were born thirteen years and a half ago, in Bohemia, the labor, at which the village midwife officiated, presenting no particular difficulty. The mother, then twenty-two years old, had, two years previously, given birth to a girl of normal physique. The sisters are of very fair complexion, small for their age, resemble each other closely, and, when seen seated side by side, hardly convey the impression that they are united by so intimate an anatomical bond. Directly, however, one sister moves, the other is constrained to follow. The trunks are not parallel, the axes of the spinal columns forming an angle the apex of which is situated below at the junction of the pelves. Each trunk is twisted on itself at an angle of about 45°, so as to turn the faces forward and to incline the heads somewhat inward. Viewed in profile, it is at once seen that the sisters are united by the posterior wall of the pelves, just as were Hélène-Judith, a description of whom is met with in old works on teratology. The apex of the angle or V formed by the conjunction of the trunks is constituted by the intimate soldering, in the median line, of the sacral and coccygeal regions, and, laterally, of the four buttocks. The composite pelvis is abnormally large, composed as it is of four ossa iliaca, from which spring four well-formed lower extremities. Below the sacral junction, between the four buttocks, in the quadrilateral and dome-like space bounded by the four thighs, is found a region the description of which is of special interest. At first view, one would be inclined to believe that the space contained only azygos parts—viz., one urethra, one vulva and one anus. There is, in effect, only a single urethral orifice from which urine has been seen to issue. But as no sound has ever been introduced through this opening, the existence of two distinct bladders can only be inferred from the fact that the desire to urinate is not simultaneous in the sisters. Immediately anterior to the urethra is situated a single, fairly well-developed clitoris. From either side of this organ is directed from before backward a rudimentary labium minus. Encircling all these parts is a nearly oval collar, representing two labia majora, which limit a single vulva. This vulva contains two vaginæ, distinctly separated from each other by a complete partition, the entrance to each vagina being guarded by a crescent-shaped hymen. Between the two vaginæ and the single anus, situated at a short distance behind, is a frail perineum. The rectum is probably single up to a certain height (no rectal examination was allowed), for the desire to defecate is simultaneous; but it is certain that there exist two large intestines. The anus, clitoris and urethra are situated in the median line corresponding with the antero-posterior diameter of the vault formed by the sacro-gluteal junction. Breisky, who, in 1878, was professor at the German Medical Faculty of Prague, and who examined Rosa-Josepha when the latter were only six months old, states that he then noticed a remarkable asymmetry of the crania, very plainly appreciated when the heads were viewed from above and behind. The foregoing details will have prepared the reader for the information that in Rosa-Josepha we have to deal with two perfectly distinct psychical personalities. The only parts that can be considered common property are the lower portions of the genito-urinary apparatus (urethra, clitoris and vulva), the rectum and perchance the lower end of the vertebral canal. That they are independent beings is evidenced by the fact that one sister can sleep while the other remains awake; one can occupy herself at a task that does not interest the other; one likes beer, the other wine; one is very fond of salad, which the other dislikes, etc. Moreover, one sister may be thirsty without the other experiencing any such sensation. The radial pulses do not beat syn-

[1] THE MEDICAL NEWS, May 30, 1891, p. 611.

chronously. There is a zone of common sensibility to afferent impressions, limited to a cutaneous space corresponding to the transverse mass situated between the two pelves. The movements of this conjoined twin are free and graceful enough. When one sister walks, her companion is not obliged to follow backward. Generally, the two inner feet advance together, to be followed by the synchronous movement of the two external ones. Either sister can walk while supporting the weight of the other. In order to accomplish this feat it suffices for the bearer to incline her body anteriorly, while the other one, having lifted up her feet from the ground, reclines on her sister's loins. They have been seen to progress on only two and on three legs respectively, mount the stairs, dance, etc. In waltzing they are very proficient. One had the croup when twelve months old without communicating the disease to her fellow. Soon afterward the non-croupous twin was seized with convulsions, the other remaining unaffected. How can we explain the existence of such a phenomenon as Rosa-Josepha? Dareste has shown that the explanation lies in the accidental fusion of two germs developed in a single ovum, and enclosed in a single chorion. The two germs, represented at the early period of development by their primitive streaks, must be inclined the one toward the other, so as to form a V, the union occurring at the future sacral region. In the case of Rosa-Josepha this must have taken place toward the end of the first fortnight after fecundation, when the medullary canal had not quite closed posteriorly. The single urethra, clitoris, vulva and rectum are easily explicable on this theory; but, as the allantois is already formed, these conjoined twins probably always possess two large intestines, two bladders and two uteri.—*Paris Correspondence, Lancet,* July 18, 1891.

The Value and Limitations of Tuberculin.—From a study of nineteen cases of pulmonary tuberculosis treated with tuberculin, DENISON in a paper read before the Colorado State Medical Society, formulates the following conclusions:

1. Tuberculin is a remedy to be classed with stimulants, hypophosphites, chloride of gold hypodermatically used, exercise, high altitudes, and cold, dry air; it is too powerful to be indiscriminately used, and the cases in which its use would be advantageous remain to be determined.

2. It is unreasonable to expect that tuberculin will be useful in septicemia or in any poisonous blood-state other than tuberculosis.

3. Tuberculin should be used not as a substitute for, but as an aid to climate and other natural methods of cure; especially are high altitudes and exercise indicated, if not otherwise contra-indicated, because they favor pulmonary expansion and aëration.

4. Only local reactions in the affected tissues are to be aimed at. High or prolonged febrile reaction is, if possible, to be avoided. The minimum dose that will accomplish this purpose is to be used; it is preferable to permit at least a day to elapse between the subsidence of one reaction and the possible production of another.

5. Deficiency of pulmonary expansion and aëration, whether a result of the injection of tuberculin or of pre-existing conditions, is a contra-indication to persistence in treatment.

6. The test for the proper expansion and aëration of a tuberculous or fibro-tuberculous lung consists in a comparison of the spirometric record with the bilateral measurements of the chest and with the physical signs.

7. The stage of the pulmonary affection has not so much to do with the question of using tuberculin as has its extent and localization, the febrile course and the expansion and aëration of the affected lung. It were desirable that the average daily range of temperature should not exceed two degrees, and the patient should be much of the time in the open air.

8. The diagnostic value of the injection of small quantities of tuberculin is borne out by the manifestation on auscultation at suspected or affected spots in the pulmonary structure of an *increased roughness of a previously existing broncho-vesicular respiration;* or by *high-pitched harsh breathing* that previously had been but enfeebled.

9. With the appearance of unfavorable physical signs, indicative of bronchial obstruction, or moist râles suggestive of softening, it would be well to intermit the injections of tuberculin and for a while substitute those of iodine, or to give iodine in some form internally, or to use inunctions of the oleate of mercury over the affected lung, until a resumption of the treatment with tuberculin seems safe.

10. As to the permanence of the effects produced by treatment with tuberculin, there is to me no reason to expect more lasting results than are to be obtained from any other agency. There is no reason why, after the disappearance of bacilli from the sputum, in the course of treatment with tuberculin, they should not again appear, as they do in the case of climatic treatment and after injections with the double chloride of gold and sodium. It is probable that the effect of tuberculin is temporary. Immunity from tuberculosis cannot be hoped for, except under such other conditions of healthful living as would insure it. Tuberculin is not a remedy suitable for the great majority of pulmonary consumptives in preference to a proper change of climate. Its efficacy does not equal that of the latter, to which, however, it may serve as an important adjuvant in a large number of selected cases.

Glioma of the Retina.—COLBURN (*Chicago Medical Recorder,* July, 1891) reports five cases of glioma of the retina in children four months, eight months, three years, and six years old, respectively (in one the age is not given). In two, after the lapse of a considerable interval, recurrence had not followed enucleation of the affected eyeball. One died with meningeal and one with cerebral symptoms. In the fifth, the disease had progressed to such a degree as to forbid operative interference.

Sunstroke.—The following circular has been issued by the Pennsylvania State Board of Health:

This dangerous illness is caused by excessive heat of the blood (from 100° to 110° F.), which produces great depression of the nervous system. It occurs during the hot season of the year, and usually to those exposed to the hot sun, but it sometimes occurs at night, and also to those exposed to great heat, in glassworks, laundries, furnaces, bakeries, iron-foundries, and the engine-rooms

of steamships. It is largely confined to the hot, close streets and passages of the cities, but is not unknown in the country. Those habituated to the use of alcohol, and the delibitated, are especially predisposed to attacks.

Dark, close-fitting clothing and such as compresses the chest and neck should be avoided during the heated term. For those obliged to labor in the sun, light clothing and a straw or light felt hat, permitting free circulation of air, are preferable.

On very hot days, one should drink frequently, but in small quantities. A large quantity of any iced drink entering the stomach at one time is injurious.

Cool water, into which oatmeal has been stirred, is a safe and refreshing drink. Water should not be drunk in considerable quantities at a temperature lower than that of spring water, namely, 56° F. Immediate death is often caused by "ice-cold" drinks. The immoderate use of alcoholic beverages is also dangerous.

The sleeping-room should be freely ventilated and cool. Constipation of the bowels should be avoided. When overheated, work slowly, frequently cooling the head, chest and back with cold water. Keep a wet cloth or some green leaves in the hat on the head, frequently wetting them with cold water. When, on a very hot day, the skin becomes dry and uncomfortably hot, a burning sensation is felt in the head, and the face is flushed and the eyes bloodshot, with a frequent tendency to urinate, the person should immediately quit work, retire to a cool place and rest in quietness; and if not speedily relieved of the sensation of heat, take a cold bath.

The attack may be very sudden and take the form of delirium in which the patient rushes wildly about and may attack those around him; or he may become weak and sink to the ground as if in a fainting spell or stupor. Loss of consciousness and mental disturbance may be only partial. Nausea or sickness at the stomach often precedes the onset. Convulsions may occur.

Sunstroke must be carefully distinguished from heat-exhaustion, in which the general symptoms are similar to those of sunstroke, but the bodily temperature is below the normal. The difference can be at once recognized by feeling the skin underneath the clothing: in sunstroke the skin feels burning hot; in heat-exhaustion it is cold.

Treatment.—1. Carry the patient into a cool and shaded place, where there is plenty of pure, fresh air.

2. Strip his clothing to the waist, and, place him in the recumbent position.

3. Pour cold water (ice-water is best) upon his head and chest until consciousness returns. The points at which the blood may be most effectually cooled are the wrists, the temples, and the ears, because at those points it approaches the surface more nearly in considerable quantities. Ice may be applied to the head and chest and rubbed over the body, but if the skin is cold no ice should be applied. Internally, small doses of brandy may with success be administered; but in all cases of sunstroke the patient should, as soon as possible, be placed in charge of a competent physician.

The patient should do no mental work for some months, and should keep free from all excitement. Persons who have once suffered from sunstroke are liable to a second attack. Insanity, in some of its varied forms, frequently follows sunstroke.

In heat-exhaustion give alcoholic stimulants and place the patient in a hot bath, so as to raise the bodily temperature.

Ignipuncture for Hypertrophied Tonsils.—CULLEN (*Cincinnati Med. Journ.*, 1891, vi. 5) states that the galvano-cautery may be employed either to completely dissect the hypertrophied tonsil or to cause a diminution in size by cicatrization from puncture. After an application of carbolic acid and cocaine, he introduces at one sitting an appropriate electrode at moderate, red heat into two or three lacunæ close together, and repeats the procedure in from three to six days. The operation is followed by a soothing antiseptic spray. If the subsequent hemorrhage should be considerable he administers tannic and gallic acids.

The following are the main indications for the employment of the galvano-cautery in the treatment of hypertrophy of the tonsils: When the tonsils have ceased to perform their functions by reason of interstitial thickening and occlusion of their lacunæ, the mouths of the crypts becoming blocked by sebaceous matter, which rapidly decomposes, they form an excellent culture-medium for various pathogenic germs, which may ultimately find their way into the lymphatic system; when a tonsil shows itself liable at short intervals to become inflamed and give rise to peritonsillar abscess; when the tonsil is so situated that it is a matter of difficulty and danger to use the tonsillotome, with extensive adhesion of the pillars, and a liability to severe hemorrhage; in all cases in which the patient is of a hemorrhagic diathesis or in other cases in which alarming hemorrhage is feared; when patients will not consent to the use of the knife and yet the demand for the removal of the gland is imperative.

Maternal Impressions and Monstrosities.—GROUND (*Northwestern Lancet*, August 1, 1891) reports the case of a woman who, in the eighth month of pregnancy, aborted with a monster, weighing five pounds. The vault of the skull was absent, the cranial cavity being occupied by the meninges and a small mass of cerebral structure. The spinal processes and the lamina of the cervical and dorsal vertebræ were wanting, so that the cord was exposed as far down as the lumbar region. In addition, there was a large umbilical hernia. Some time later, a pregnant woman, coming for consultation, saw the specimen preserved in a jar. Naturally frightened, she could not exclude the hideous picture from her mind. In the course of several weeks this woman aborted with a fetus of four months—a monster, crudely resembling that of the first case; the vault of the skull and the spinal canal were open. Both women were primiparæ. The first has since given birth to a well-developed female child. Both monsters were of the female sex. In the first a history of a mental impression was wanting.

Hemiplegia followed by Restoration of the Knee-jerks in a Tabetic.—HUGHLINGS JACKSON and JAMES TAYLOR (*British Medical Journal*, July 11, 1891) have reported the case of a man, forty-nine years old, with the symp-

toms of hemiplegia in addition to those of tabes dorsalis: lightning pains, ataxia, contracted pupils that reacted with accommodation but not on exposure to light, and absent knee-jerks. There had been two attacks of hemiplegia, with an interval of three days. Forty-seven days after the second, the knee-jerk was elicited upon the right but not upon the left. On examination, twenty-two months subsequently, the right knee-jerk was readily elicited, the left but feebly on reinforcement. The explanation of the phenomenon must be dependent upon a heightened irritability of the ganglion cells of the anterior horns of the spinal cord, occasioned by the secondary descending degeneration of the crossed and direct pyramidal tracts.

Immunity from the Diplococcus Pneumoniæ Conferred by a Glycerin Extract of Hepatized Lung.—VASSALE and MONTANAIRE (*Gaz. d. Ospit.*, No. 19) removed soon after death from a case of croupous pneumonia in the stage of gray hepatization about an ounce and a half of pulmonary tissue, which they cut into small pieces and placed in a steam sterilizer, then rubbed up, and added thirty parts each of distilled water and glycerin; the mixture was well shaken and filtered. Of this filtrate nine c.c. were injected, in three parts, into each of two rabbits. These and two control-rabbits then received one c.c. of a virulent emulsion of a hepatized lung. The control-animals succumbed to pneumonia, the protected animals survived. A rabbit which first received an injection of a glycerin extract of a healthy lung and then an inoculation from a hepatized lung, died of pneumonia. —*Wiener klinische Wochenschr.*, June 4, 1891.

Psorosperms in a Case of Paget's Disease of the Glans Penis.—PICK (*Prager medicin. Wochenschr.*, June 17, 1891) has reported to the Society of German Physicians in Prague, the case of a man who presented an eczema of the glans penis that had existed a year and a half. The diseased weeping surface was ulcerated and displayed a tendency to proliferation of the epithelium, with the formation of nodules. An existing phimosis was thought to be the source of the disorder and was removed. Primary union took place and the condition improved—soon, however, to recur. The new nodules were removed. These presented microscopically, in addition to the small-celled infiltration common to eczema, typical carcinomatous proliferation within which was an abundance of psorosperms. Upon this a diagnosis of Paget's disease was made.

Operative Treatment of Morphine-poisoning. — In the *Detroit Emergency Hospital Reports*, June, 1891, is reported the case of a girl, twenty-one years old, not an opium-habitué, who had taken twenty grains of morphine. The respirations were but four in the minute and the coma was profound. Artificial respiration by Sylvester's method proved insufficient. The trachea was opened, a tube introduced, a hand-bellows attached and respiration thus maintained for three hours. At the end of this time, the reflexes returned and the restoration of the patient was assured. The bellows must be so constructed as not only to introduce air into the bronchi, but also to allow for the escape of the vitiated air. The action should, as far as possible, correspond to the usual respiratory action.

The Re-union of Cut-off Fingers.—POPOFF (*Vratch*, No. 14, 1891) has reported the case of a soldier, who, while hewing a block, struck his left hand with an axe. Thirty or forty minutes after the accident the index, middle and ring fingers were found to be completely severed through their first phalanges, at the line of the interdigital fold, and the little finger through the first inter-phalangeal joint, all four being held by bridges of skin. The detached parts were at once replaced and sutured. The little and index fingers united perfectly, though with impaired mobility. The second and third phalanges of the middle finger sloughed, but the first united. The ring finger became gangrenous and was thrown off.—*The Provincial Medical Journal*, June 1, 1891.

Public Institutions as Sources of Impairment of Vision.—LIPPINCOTT (*Pittsburg Medical Review*, July, 1891) maintains that blindness is increasing in the United States disproportionately to the increase in population. He holds that granular conjunctivitis is an important factor in the causation of impairment of vision, that it is a contagious disease, the dissemination of which is facilitated by the agency of orphan asylums, orphan and reform schools, and similar institutions, from which it can be excluded by rigid inspection (including systematic eversion of the eyelids), and the spread of which can be checked by absolute isolation of infected cases, together with appropriate hygienic regulations.

The Treatment of Surgical Tuberculosis.—The Paris correspondent of the *Wiener medizinische Presse*, July 12, 1891, states that at a recent meeting of the Académie de Médecine, LANNELONGUE presented a new method of treating tuberculosis, especially surgical tuberculosis. The treatment is not directed at a local destruction or inhibition of the growth of the tubercle bacilli, but at a conversion of the tuberculous tissue and its immediate surroundings into fibrous tissue—in a word, at encapsulating the tuberculous mass, which is accomplished by injecting about it small quantities of chloride of zinc. The results thus far obtained have been gratifying.

The Contracted Pelvis as an Evidence of Degeneration.—As a result of his investigations, WIEDOW (*Münchener medicin. Wochenschr.*, June 30, 1891) concludes that the various types of deformed pelves are but expressions of an abnormal constitutional condition. In thirty-five women with deformed pelves he found cretinism in four, anomalies of the skeleton in ten, small growth of the body in seven, anomalies of the internal and external genitalia in eleven, and struma in three. The causes of these anomalies may be operative in the germ or during intra-uterine or extra-uterine development.

The Cure of Chronic Peritonitis by Laparotomy.—HENOCH *Berliner klin. Wochenschr.*, July 13, 1891) presented to the Society of Physicians of the Charité, at Berlin, the case of a girl five years old, who, following a fall, developed considerable ascites. Not yielding to thrice-made puncture, laparotomy was performed. On opening the abdominal cavity, the peritoneum was found not only reddened and thickened, but covered with innumerable grayish-red miliary nodules. Carefully examined microscopically, the nodules presented nothing tuberculous in character. The child recovered perfectly.

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SATURDAY, AUGUST 29, 1891.

THE PROPER SPHERE OF THE OPTICIAN.

IT is but a few years since the province of the druggist was clearly outlined, and its delimitations, in contra-distinction to that of the physician, sharply determined. A little further back in history it was found that the barber and the surgeon had functions that very properly required differentiation. When the barber was restricted to his proper field of action by other barbers that had become or had determined to become surgeons, there was doubtless much bitterness of heart and outcries against the injustice on the part of those that kept as their sign the red-banded post. In the same way, when the apothecary, if he would continue to practise medicine, was compelled to obtain a medical instead of only a pharmacological education, he doubtless also thought himself aggrieved. In both cases the world in general and each of the four professions in particular, is finally the better off. No druggist of character would wish the old days back.

Another great stride in the march of medical progress must soon be taken, and when it is resolutely done the world will be by far the better. The optician, *quâ* optician, must be forbidden to prescribe spectacles. It should be as illegal for an optician to prescribe glasses as it is for a pharmacist to prescribe morphine or arsenic. Both the optical instrument and the drug are medicinal agents, and only a physician is fitted to judge of the propriety of their use. It is a common error prevalent in the community, and one that some few ignorant opticians have accepted, that the prescription of spectacle lenses is a purely optical, physical, or mechanical process. This is a most grievous mistake, and one that is costing thousands of innocent people their happiness, health and vision.

Every pair of glasses worn has a medical significance, and every case of refraction resolves itself into a question of physiology, pathology and pathogeny. The merely physico-optical part is but the simple alphabet of the matter—the most primary rudiments of the therapeutics of ocular, and of ocularly originating neurological affections. A few considerations may help toward an apprehension and acknowledgment of this great truth:

1. The eye is a living, not a dead, camera-obscura, and the simple mechanico-optic laws will apply to it only in a subordinate and very limited sense. The purely optical laws must be used by a physician, by a living intelligence, in accordance with manifold and changing circumstances and ever-varying function. Even when no disease exists other than ametropia and ametropically-caused conditions, there are physiology, life, occupation, hereditary factors, anisometropia, and a possible multitude of dyscrasiæ, of which only a physician can judge.

2. It is admitted that when the optician suspects disease he should refer the patient to the physician. The admission is death to the contention. Only a physician *can* suspect many diseases of the eye, or diseases caused by ocular abnormality. The proof of this lies in the horrible fact always turning up with mournful regularity at the oculist's office—the fact of ruined eyes because the opticians have *not* suspected. Glaucoma *cannot* be suspected except by one who has studied glaucoma—*i. e.*, by a physician. Glaucoma *is not* suspected by the optician, and while he is trying to find a glass for the eye the eye is ruined. Choroidal, retinal, and optic-nerve diseases of a hundred kinds cannot be suspected by the optician, and while he is pottering with glasses blindness overcomes the patient. The horde of reflex neuroses of ocular origin cannot be known by the optician, and their causes cannot be stopped by means of any purely optical knowledge.

3. Ametropia in persons under forty-five years of age (and often in those from forty-five to fifty-

five) cannot be accurately diagnosticated except by the use of a mydriatic, and a mydriatic should never be used, and even now cannot legally be used except by a physician. Ophthalmologists are in thorough accord that refraction without paralyzed accommodation is mere guess-work, and is not scientific. It is the small degrees and the unsymmetrical axes of astigmatism, the so-called spasms of accommodation, the relations of ametropia and heterophoria, the existence of anisometropia, the tendency to progressive myopia, etc., that, uncorrected, are breeding a host of ills in the hyperesthetic and ocularly overworked urban resident, and these are facts that can be diagnosticated and proceeded against solely by a *medically* educated mind.

4. As a last resort the optician claims the presbyope as his own. This claim must also be denied. The reasons for the denial are patent. Only a physician can say when the presbyopic process is complete. Some power of accommodation often persists up to fifty or sixty, and even a greater age, and may always be the exciting cause of pathologic reflexes. But most important is the fact that it is in the presbyope that glaucoma and cataract arise—glaucoma in which the loss of a day may mean blindness, cataract that requires constant medical watchfulness and medical advice to prevent many evil results.

Many other reasons of a like kind will arise spontaneously in the mind of the student of the living eye, or will be forced upon those that yield ungraciously to the growing need. It is but fatuous self-deception to charge the medical specialist with avarice or with jealousy of the optician; it is only struggling against the inevitable to attempt keeping the two professions longer united. The prescription of glasses is one sort of work, the scientific and artistic filling the prescription is another kind of work. There is not the most far-away tendency of the physician to belittle the function of the optician. The physician in many ways is greatly dependent upon the optician, and is helped by him to realize the common aim—the good of the patient. The two professions must work in harmony, and this can never be so long as their respective spheres are not delimited.

The greatest enemy of the optical profession is he that contends that opticians are capable of prescribing spectacles. The blunders that the optician is repeatedly making, and, since he is not a physician, must necessarily make in attempting to prescribe, are bringing upon him the increased contempt both of the physician and the public. If the optician *could* prescribe without grievous mistakes, the opposition of all the physicians in the world would not and should not change the common custom or affect the optician's reputation. The only way to elevate the optical profession is to restrict the optician's field of action to such work as he can do rightly and well. The scientific manufacture and the artistic fitting of a perfect pair of glasses according to the prescription of the physician is an art requiring high qualities of mind and skill, and, when it comes to be estimated at its proper therapeutic value, will command increasingly more and more respect.

It is wretched ethics and very far from our aim to encourage malpractice suits, but such suits often correct and open the eyes of the community to existing wrongs. One of the greatest advances in medico-legal progress, fraught with incalculable good to humanity, consists in the decision of the French courts, that it is illegal for an optician to prescribe glasses or give advice for any visual trouble. This has been called "a narrow technical theory," but by none who understands a tithe of the evils daily resulting from the non-existence of such a law in the United States.

SIMPLICITY AND INDEPENDENCE IN PRESCRIPTION-WRITING.

IN this day of extensive knowledge of drugs and of their physiological actions there is a great tendency to complexity of prescription. Impatient or dissatisfied with the slowness or uncertainty of action of a single remedy, the therapeutist is tempted to devise formulæ that will answer many and varied purposes. In this he is encouraged by the unfortunate practice of introducing into text-books formulæ the memorizing of which the student deludes himself into believing is the essence of therapeutics. He would be better taught if, instead, he were shown that the most effective treatment depends upon a knowledge of disease and of the action of individual drugs.

A drug should be prescribed for the effects that it will produce. Given alone, in this way, its action can be best studied. Experimental therapeutics in the lower animals has only a relative value, to be confirmed or modified by observation in man. There can be no objection to the intelligent combination of a number of remedies in a single prescrip-

tion; but they should be rationally combined, from a knowledge of their therapeutic effects, to accomplish definite results that it is known can only be obtained by such combination. The danger consists in the indiscriminate and routine use of such formulæ, as a result of which prescription-writing becomes merely mechanical, while the isolated action of a remedy escapes observation, and the lesson that every case should teach is lost.

Sometimes, of course, drugs are prescribed when drugs are not required. The mere existence of a valvular lesion of the heart or of derangement of the gastro-intestinal apparatus does not, by any means, indicate the administration of medicaments. The physician owes it to himself and to his patient not to prescribe unnecessarily. He has no more right to deceive or pretend under such circumstances than under any other.

To be successful, a therapeutist, besides being observant and conscientious, must be intelligent, original, independent, and have a distinct purpose in view. The prescriptions of such an one will always be simple, spontaneous, rational, and adapted to the individual case. To him ready-made formulæ are as obnoxious as they are unscientific.

INFLUENZA AND ITS COMPLICATIONS.

THOUGH we are not at present cognizant of the ultimate cause of influenza, the evidence is sufficient and of such a character as to warrant the assumption of its toxemic nature; and the next step in this line of thought is to refer the etiology of the disease to microbic influence. Its epidemic occurrence, its transmission along lines of travel, its fatality among the debilitated, its peculiar symptomatology and its disastrous complications, all point to an infectious agency of origin.

Of the group of infectious diseases there is none to which influenza bears perhaps a more striking analogy than to diphtheria. Both occasion profound depression, from which recovery is tedious and tardy. Both are followed by the evidences of polyneuritis, especially manifest in the ocular and peripheral palsies, in the neuralgias, in the abolition of the reflexes, in the trophic changes that take place. In both are cerebral symptoms observed. One other manifestation—or rather group of manifestations—do these two diseases present in common, that is, those referable to the heart—a complex of symptoms that may be ascribed to inflammation of the vagus. The action of the heart is at first slowed, then accelerated and irregular; ultimately death may ensue from heart-failure, a result of degeneration of the cardiac muscle. In the recent epidemic this manifestation of cardiac deficiency was especially noticeable, and to it is the fatal result in not a few cases to be ascribed. The profound alterations in nerve and nutrition also afford sufficient explanation for the protracted convalescence and the long-deferred and oft imperfect recovery.

THE PATENT MEDICINE SUBSTITUTION BUSINESS.

"No one like a thief to catch a thief" is an old motto and one that is being illustrated in the proprietary medicine business. The nostrum-venders must now fight their imitators, and it is to be hoped that in this piratical and parasitical rough-and-tumble the public may become disgusted with the whole crew. Millionnaire patent-medicine venders are becoming as common as ward politicians, and no one will feel sorry that they must take some of their own medicine. It seems that almost every secret compound now has many imitations, and that there are a number of large manufacturers whose sole business it is to make these counterfeits. The standard article is imitated in originals, in qualities, appearance, name, and appearance of the packages, as nearly as it is possible or safe. Druggists buy these counterfeits and use their own printed wrappers to give them a personal guarantee of value and private manufacture. Whenever an imitation attains any considerable popularity it is probable that it will find imitations. And thus is again illustrated the old saw:

> These little fleas that do me tease
> Have lesser fleas that bite 'em,
> And these again have lesser fleas,
> And so *ad infinitum!*

THE HOT SPRINGS DISGRACE.

THE excellent *Journal of the State Medical Society of Arkansas* very justly and courteously sets us right concerning the fiendish doctors and their drummers at Hot Springs. It is indeed a serious matter, and our banter was far from being meant as reproach to those that have heroically tried to make head against the disgusting abuse. Our own withers are far from being unwrung. It appears that the city, county, and State authorities have vainly tried to break up the practice, the licensing

and ticketing the drummers with badges being the last attempt to make these wretches odious. The bottomlessness of human shamelessness has frustrated all such attempts, and the execrable business still goes on. Our contemporary has our sympathy, and for the very evident reason that East and West alike—the whole profession, indeed—must willy-nilly share in the disgrace.

SOCIETY PROCEEDINGS.

SECOND CONGRESS OF TUBERCULOSIS.

Held in Paris from July 27 to August 2, 1891.

(Continued from p 199.)

AT the second session the subject of "The Identity of Human Tuberculosis with Tuberculosis of Fowl, of Cattle, and of Other Animals" was taken up.

M. CHAUVEAU presented a communication upon "The Identity of Human Tuberculosis and that of the Ox: an Experimental Study based upon Inoculation of Cows with Tuberculous Products obtained from Human Subjects." In his experiments with the products of tuberculosis in man M. Chauveau had been struck by the apparent identity of tuberculosis in different animals. He endeavored, particularly, to infect cattle with the products of human tuberculosis, so as to determine whether or not bovine tuberculosis would result. These experiments were conducted upon three lines: The ingestion of tuberculous matters, intra-venous injection, and subcutaneous introduction.

Infected food was administered to three young animals: one six months old, another eleven months, and the third one older.

The first was given a small quantity of a mass made with fragments of lungs obtained from a patient who died from acute miliary tuberculosis. This animal became tuberculous, as did a control-animal to which were given the products of bovine tuberculosis in the same manner. The lesions were confined to the digestive tract, consisting of a confluent eruption of tuberculous granulations on the peritoneum and small intestine; the liver also presented a few well-developed tuberculous granulations, while the respiratory and grandular apparatus were free from lesions.

The second animal also was given a mass composed of a fragment of lung from a case of miliary tuberculosis, to which was added a fragment of lung obtained from a case of caseous pneumonia. In this animal the lesions were limited to the respiratory apparatus, no lesions being found in the intestine or abdominal viscera; the lung presented a certain number of caseous masses, and the mediastinal glands were involved.

The third animal was given a mass made from a piece of lung from a case of caseous pneumonia. The resulting lesions were situated in both the digestive and respiratory apparatus; there existed a confluent tuberculous eruption on both the small intestine and peritoneum, while the rennet presented a lenticular eruption that had already reached the ulcerative stage; in the respiratory apparatus a fine eruption had begun to appear in the larynx, and was extending into the smallest bronchial ramifications.

The second series of experiments was intended to demonstrate the transmission of human tuberculosis to the ox by means of intra-venous injections. An emulsion was made with a piece of lung obtained from a young man who had died from acute tuberculosis. This was injected into the jugular vein of a three-months-old calf. The animal was killed on the twenty-ninth day, and at the post-mortem examination the bronchial glands were found tuberculous, while in the lungs granulations were present; these same lesions were found in a control-animal that received bovine virus in the same way. In a third series the subcutaneous method was employed. A mixture of tuberculous matter containing no solid particles was made with material obtained from a case of tuberculous arthritis. Injections were made in the subcutaneous tissue; in each instance a tuberculous tnmor was obtained. A few hours after the injection has been made, a slight swelling appears at the site of injection; then follows a period of latency, succeeded in turn by an irritative process, resulting in tumefaction that does not disappear; this is the tuberculous tumor. In all such cases the nearest lymph-gland became swollen; in no case did the tuberculosis generalize itself, the nearest lymph-gland apparently arresting the process.

As a result of his experiments, M. Chauveau believes that the tuberculosis of man is absolutely identical with that of the ox.

M. VIGNAL next presented a communication on "The Non-identity of Human Tuberculosis and that of Birds." The experiments were made with a view to confirm the statements made a few years ago by MM. Nocard and Roux, that the bacillus of bird-tuberculosis was but an attenuated form of the bacillus of human tuberculosis. The experiments of M. Vignal were made to determine whether Koch's bacillus by passing through several cultures would not lose its virulence and become more like that of bird-tuberculosis. With this end in view, on the 4th of March a pheasant was inoculated with sputa obtained from a tuberculous patient. A guinea-pig that at the same time received a certain quantity of the preparation died very rapidly, demonstrating the virulence of the material used. The pheasant was living two months after the operation. Then the same pheasant was again inoculated with tuberculous virus, as was also a guinea-pig; the latter died, while the pheasant remained well. A third inoculation of tuberculous matter was made, and again the control guinea-pig died, while the pheasant remained well.

PROF. STRAUS and DR. GAMALEIA next presented a communication on "The Differential Characters of Human and Bird Tubercle Bacilli." The first character that differentiates these two bacilli is the appearance of the culture on a solid medium—cultures from human tuberculosis being dry, nodular, scaly and hard, while bird-tubercle cultures are unctuous, soft, and moist. Again, the bacilli differ in their pathogenicity, certain animals being susceptible to one culture and refractory to the other. Hens are refractory to human tuberculosis, while they readily die from bird-tuberculosis; while the contrary is the case with the dog. The rabbit and guinea-pig are susceptible to the action of both bacilli, but in

different ways. Guinea-pigs inoculated with human tuberculosis die, the viscera presenting apparent tubercles; while inoculations of the bird-bacillus will kill these same animals, but without leaving any macroscopic signs of the disease in the internal organs.

Straus and Gamaleia have also found that these two bacilli invariably preserve their peculiar properties and their special pathogenicity independently of the culture-medium employed. They endeavored by certain means to modify the two bacilli. The products of tuberculosis in birds were introduced beneath the skin, into the peritoneal cavity, and into the veins of rabbits and guinea-pigs, which died with tubercles in many organs. Fragments of these organs were introduced into a second series of guinea-pigs and rabbits, which in turn died, showing tuberculous lesions, especially in the lungs in guinea-pigs and in the liver in rabbits. In the third and fourth series, however, even when these animals died, their organs contained no tubercles nor any bacilli.

These investigators have not succeeded in permanently domesticating the bird-bacilli in the rabbit and guinea-pig, still less in developing from it the bacillus of human tuberculosis. They have also endeavored to determine whether it were possible to vaccinate the dog against human tuberculosis by frequently inoculating him with bird-tuberculosis. Several dogs experimented upon for months received intra-venous injections of the bacilli of bird-tuberculosis; but when they were subsequently subjected to an intra-venous or intra-peritoneal injection of the bacilli of human tuberculosis they all died with the same lesions presented by a control animal. As an outcome of their experiments, Straus and Gamaleia are led to believe in the non-identity of bird-tuberculosis and the tuberculosis of man.

MM. CADIOT, GILBERT, and ROGER presented a paper on "Human and Bird-Tuberculosis." They first described the appearance of bird-tuberculosis, and stated that it presented itself as caseous masses and granulations, more or less extensive and occupying the liver, spleen, and peritoneum—the intestines presenting ulceration, and in this case the evacuations containing bacilli, thus explaining the mode of infection in, and the origin of, certain epidemics. In hens tubercles are histologically constituted of a mass of epithelioid cells, the central portion of which becomes vitreous; while in pheasants these epithelioid cells are surrounded by connective tissue that undergoes amyloid degeneration; in all these lesions the bacilli present the same appearance and the same reactions to stains as do those of human tuberculosis.

Cadiot, Gilbert, and Roger have also experimented to determine the relation between the tuberculosis of birds and that of mammals. Two series of experiments were conducted. In the first bird-tuberculosis was studied. The virus of bird-tuberculosis injected into the veins and peritoneum of hens produced lesions similar to spontaneous or primary tuberculosis; the same virus injected into the peritoneum of rabbits resulted in a general eruption of visceral tuberculous granulations; the same injections made into guinea-pigs afforded variable results. Twenty-four guinea-pigs each received a peritoneal injection; thirteen presented no appreciable lesion; in seven localized visceral granulations were found; in each of five a caseous abscess was found at the inoculation-point.

In another series two guinea-pigs were inoculated with virus obtained from a case of pheasant-tuberculosis. In both, generalized tuberculosis resulted, the tuberculous products of which were inoculated into another series of guinea-pigs, and this was repeated until the tuberculous products had passed through three series of animals, when it was found that this bird-tuberculosis, by passing through three series of mammals, had lost the specific properties of bird-tuberculosis, and was no longer destructive to birds.

In the second group of experiments forty hens were inoculated with human tuberculous virus and none died; two were still living; while of the remaining thirty-eight, which were killed, thirty-three presented no lesion at autopsy, while in the remaining five, small, transparent, tuberculous granulations were found, evidently identical with human tubercles, as they induced disease in guinea-pigs; in another case, the virus was so much transformed that its inoculation into another hen resulted in disease.

MM. COURMONT and DOR, of Lyons, read a communication on "Bird-Tuberculosis," discussing the probability of its bacillus being only a variety of the bacillus of human tuberculosis. They conducted two sets of experiments. On the one hand, they inoculated hens with mammalian tuberculosis by the subcutaneous method and also by the digestive tract; while on the other hand, rabbits and guinea-pigs were inoculated with bird-tuberculosis. The conclusions arrived at are: that the hen is not absolutely refractory to human tuberculosis; and that inoculation by the digestive tract is much less certain than inoculation by the subcutaneous method; also that the bacillus of human tuberculosis can be propagated in hens by subcutaneous inoculations. Courmont and Dor also believe that when bird-tuberculosis has lost its special influence or character by passing through mammals, it retains the faculty of producing general tuberculosis in the rabbit; but this same virus after a single passage through a hen loses all its peculiar properties toward mammals.

DR. HÉRICOURT, of Paris, related that he had treated 56 cases of tuberculosis with injections of the serum of dogs' blood. He divided his observations into two groups: one included those who had reached the third stage of the disease; in these the treatment had no influence whatever; in the second group, composed of cases of tuberculosis in the second stage, advanced bone-tuberculosis, facial lupus, etc., a remarkable change had taken place, manifested by improvement in the digestion and diminution in the number of bacilli in the sputum, while an absolute cure was only observed in cases at the very beginning of the disease, when no bacilli could be found in the sputa.

DR. LANDOUZY presented a communication on "Tuberculosis of Newborn Children." In the category of newborn, Dr. Landouzy included all children between one day and two years old. He maintained that deaths from tuberculosis constitute a large part of the mortality in the newborn, as shown by the statistics of the Tenon Hospital in Paris—statistics the data of which have been verified by autopsy. Dr. Landouzy insisted that the community ought to be taught the ease with which children are infected with tuberculosis, especially by the digestive tract, even when not predisposed by heredity.

PROF. SEMMOLA, of Naples, read a paper on "The Treatment of Pulmonary Tuberculosis by the Combined Action of Iodoform and Injections of the Serum of Dogs' Blood." He stated that during the preceding eleven years he had obtained good results from the administration of small, frequently repeated doses of iodoform, given by the mouth. For several months he had employed the method of injection of the serum of dogs' blood recommended by MM. Richet and Héricourt, with such favorable results as to encourage him to continue the method, at the same time combining it with the internal administration of iodoform in small, frequently-repeated doses.

DR. VIGNAL next read a paper on the "Heredity of Tuberculosis," being the outcome of laboratory experiments. These experiments were conducted as follows: a number of guinea-pigs were inoculated with fragments of fetal organs or of organs taken from newborn animals the mothers of which were definitely tuberculous.

A second group of guinea-pigs was inoculated with fragments of placenta, macerated, as in the first instance, in a ¾ per cent. salt solution; while a third group was given injections of sputum and fragments of organs obtained from the mothers.

The results were negative as to the transmission of tuberculosis from the mother to the fetus; for, while all the guinea-pigs that received fragments of sputa and organs from tuberculous mothers became tuberculous and died, twenty-four guinea-pigs inoculated with organs obtained from children born of tuberculous mothers and eighteen guinea-pigs that had been inoculated with fragments of placenta remained normal.

In another series of experiments an effort was made to ascertain whether tuberculosis could be directly transmitted to the fetus by the mother. For this purpose an injection of Koch's bacillus was made into the peritoneum of five pregnant guinea-pigs. The liver and spleen obtained from the products of conception were inoculated into nineteen other guinea-pigs, all of which remained non-tuberculous. Several that were killed five months later presented not the slightest trace of tuberculosis. Vignal concludes that instead of being frequent, tuberculous heredity, on the contrary, seems to be very rare.

DR. HUTINEL, of Paris, in connection with the same question, stated that, according to his experience, congenital tuberculosis is very rare; for out of a series of 252 autopsies on children, in only 8 had he found tuberculous lesions, the age in three varying from five to six and seven months, the youngest being forty-one days old, and in none does he feel justified in stating that the tuberculosis was congenital. In the second year, however, he finds that one-third of the children dying present tuberculous lesions, and that this propertion increases still more in the third and fourth year.

Another argument in favor of the tuberculosis not being congenital is that of 18,000 newborn city children who are annually sent to the country through the care of public charitable institutions, not more than 20 tuberculous children have ever been met.

The conclusion to be drawn is that all children born of tuberculous parents are not tuberculous, but constitute subjects favorable for the development of this constitutional disease.

DR. BERNHEIM presented the following conclusions: That there is no such thing in tuberculosis as heredity of the tuberculous germ, and that the predisposition to the development of tuberculosis is not greater in the offspring of tuberculous parents than in those born of individuals suffering with any other constitutional disease; finally, that *tuberculosis is always transmitted by contagion.*

DR. JACOBI, of New York, stated that he was the first, over twenty years before, to present a case of congenital tuberculosis.

DR. KIRMISSON read a paper on "The Treatment of Tuberculous Peritonitis by Means of Injections of the Serum of Dogs' Blood." The patient was a girl, three years old, with ascites, for the relief of which puncture was performed. The liquid again accumulating, laparotomy was resorted to. A large number of tuberculous granulations were found all over the visceral and parietal layers of the peritoneum. After carefully washing out the peritoneal cavity, the abdomen was closed, but a few days later the liquid had again collected. Dr. Kirmisson then proceeded to make injections of the serum of dogs' blood. Soon after, all induration of the abdomen and the ascites completely disappeared.

DR. PINARD also read a communication on "The Treatment of Weak Newly-born Children with Injections of the Serum of Dogs' Blood." Two children, both born before term, of mothers who had reached the last stage of the tuberculosis, and who died soon after confinement, were given injections of the serum of dogs' blood with great benefit. Encouraged by the favorable results obtained, Pinard made injections of the serum of dogs' blood in all children that from whatever cause weighed less than four pounds. In seventeen children the results were so satisfactory as to have stimulated Dr. Pinard to employ this method in all instances in which a considerable weakness is present at birth.

DR. BERTIN, of Nantes, insists that the goat is refractory to spontaneous tuberculosis, and that the economy of this animal contains a substance that is a protective against tuberculosis.

DR. BERNHEIM stated that of forty-eight goats on which he had performed autopsies he had found tuberculous lesions in none, and that he had never been successful in inoculating a goat with tuberculosis.

(*To be continued.*)

CORRESPONDENCE.

THE POWER OF WILL IN DISEASE.

To the Editor of THE MEDICAL NEWS,

SIR: On reading your editorial on "The Power of Will in Disease," in THE MEDICAL NEWS of June 27th, a case came to my mind that may be cited in illustration of the correctness of your remarks.

While I was resident house-physician in the German Hospital in London, a girl, about twenty-two years old, came to the out-patient department, accompanied by her mother and walking with much difficulty on crutches. She stated that she was unable to stand without support, not to mention walking; that this condition had existed for a long time, for months if not for years, and that she had gone the rounds of pretty nearly all the London hospitals without deriving any benefit. Her condition,

in fact, was continually becoming worse. At first sight I judged the case to be one of hysterical paraplegia and told the girl to wait until I had disposed of the other patients, when I would examine her case more thoroughly. After the other patients had been attended to, I made a few necessary inquiries and examined the feet and legs, and was convinced that my diagnosis was correct. I thereupon applied the faradic current to each leg for a few minutes, prescribed some embrocation (the nature of which I have entirely forgotten), and told the girl to report in a fortnight.

When she returned she came without crutches, walking with perfect ease, and exceedingly happy and grateful for the improvement. I have not heard of her since, having left the hospital some years ago, but as this occurred about three-quarters of a year before I left, I presume that the cure lasted at least that long, as she would otherwise probably have returned, having been so much benefited the first time.

As an epicrisis to this note I should like to offer the following: This case had, no doubt, been correctly diagnosticated at the other hospitals, but had possibly not received the necessary *sympathy* at the hands of the physicians; for we all know what a *crux medicorum* hysteria often proves. Then some good friend may have told the girl to try the German Hospital; that the physicians there were very clever people. Probably favorably prepossessed she came, and on finding that she received more attention than had been given her in the other over-crowded places, possibly with a lot of students worrying over the cases, she conceived the idea that her disease could be cured, and the successful termination was, in fact, the direct outcome of her own (subjective) conviction. I am, etc.,

F. A. PHILIPPI, M.D.

NIEHEIM, WESTPHALIA.

TYPHOID FEVER AND INSANITY.

To the Editor of THE MEDICAL NEWS,

SIR: The recent reports in THE MEDICAL NEWS by Dr. E. E. Graham and Professor H. A. Hare of cases of typhoid fever complicated by insanity are certainly of great interest.

There is, however, a criticism which I wish to make for the sake of accuracy.

Mercier (*Sanity and Insanity*, p. 140) says: "There are only two causes of insanity—*heredity* and *stress*." This broad definition, it seems to me, entirely covers the ground. Everyone has more or less tendency, on account of heredity, to become insane. The greater this tendency, the less the stress of outer circumstances will there be required to produce insanity, and *vice versa*.

Cases have been reported by Wood, Osler, and others in which insanity has developed in the course of or during convalescence from typhoid or other fevers and also after injuries and surgical operations. The operative causes producing insanity, common to all these physical processes and conditions, are malnutrition, exhaustion and irritation of the cerebral structure. Now, ordinarily the cerebral disturbance induced by these physical ailments does not provoke insanity, because there is not sufficient cerebral instability. But let a person with an exceedingly unstable nervous organization be attacked with dysentery, typhoid fever or pneumonia; then insanity will be apt to develop as a complication or a sequel. This insanity will, in all likelihood, be of that *form* to which the person is predisposed.

In Dr. Graham's case, for instance, it is very probable that a severe surgical operation, an attack of one of the severe fevers (other than typhoid), or any great emotional disturbance would have induced insanity. The heredity existed. The fever was sufficient stress.

In a certain sense, it must be admitted that it is correct to speak of insanity as a complication or a sequel of any of these physical processes. But I would call attention to and emphasize the fact that when insanity occurs in this connection, these various physical diseases simply act as the exciting causes. It would therefore be also entirely correct to speak of typhoid fever as the exciting or determining cause of insanity, or to say that insanity was induced by typhoid fever.

THEODORE DILLER.

KNIFE-BLADE IN THE BRAIN.

To the Editor of THE MEDICAL NEWS,

SIR: The report in THE MEDICAL NEWS of July 25th of a remarkable case in which a knife-blade was carried in the brain for years after its entrance, recalls a peculiar and somewhat similar case presented to the class of medical students in the University of Louisville in the winter of 1849–50, at the medical clinics of Prof. Elisha Bartlett, at the Louisville City Hospital. A man was brought into the medical wards for an undiagnosticated brain-trouble. He appeared insane, could give no history of himself, did not make any complaint, nor, as I remember, did he talk at all.

The cerebral disturbance was evident enough, but its cause could not be determined. Examination of the body revealed many scars (principally over the chest) which appeared to have been a result of knife-stabs and cuts. There was also above the external angle of the left eye a festered spot, so small that it was not regarded as of any significance.

In the course of a few weeks the man died. On post-mortem examination a piece of a dirk knife blade from two to three inches long, I think, was found in the left anterior lobe of the brain, having penetrated the orbital process of the frontal bone and having been broken off, entering in at the festered spot, which proved to be the orifice of a sinus communicating with a deep abscess formed around the blade of the knife in the brain. How long the knife-blade occupied this situation could not be stated, but supposing that the injury was inflicted at the same time as that to which the scars were due, it must have been some months, as the cicatrices appeared to be old.

I do not know if this case was ever published and I write exclusively from memory; my record may not be exact, but the history in more perfect form ought to be found in the old records of the Louisville City Hospital.

Very respectfully, VIRGIL MCDAVITT, M.D.

QUINCY, ILL.

DuBois-Reymond, of Berlin, has been awarded the Gold Medal of Science.

NEWS ITEMS.

The Association of American Physicians will hold its sixth annual meeting, in connection with the second Congress of American Physicians and Surgeons, at Washington, D. C., September 22, 23, 24 and 25, 1891.

The following program has been formulated:

TUESDAY, SEPTEMBER 22D.

Session of the Association, 10 A.M.

President's Address, by Dr. William Pepper, of Philadelphia.

General business, reports, etc.

Discussion on the Treatment of Visceral Tuberculosis by Koch's Method. Reports by Dr. F. P. Kinnicutt, of New York; Dr. Harold C. Ernst, of Boston; Dr. William Osler, of Baltimore; Dr. J. H. Musser and Dr. J. P. C. Griffith, of Philadelphia.

The Climate of Southern California for Respiratory Diseases: a Preliminary Paper, by Dr. Norman Bridge, of Los Angeles.

Experimental Studies on the Causes of the Localization of Pulmonary Phthisis and certain other Infectious Diseases in the Lungs, by Dr. J. W. Roosevelt, of New York.

Session of the Congress, 3 P.M.

Conditions Underlying the Infection of Wounds, including a Discussion of Disinfection with reference to the Treatment of Wounds, of the Relation of Bacteria to Suppuration, of the Resistance of Tissues to the Multiplication of Bacteria, and of the Effects of Antiseptic Agents on Wounds. *Referee*, Dr. William H. Welch, of Baltimore. *Co-referee*, Dr. Roswell Park, of Buffalo.

The discussion will be adjourned, if necessary, until Friday afternoon.

WEDNESDAY, SEPTEMBER 23D.

Session of the Association, 10 A.M.

Discussion on the Remote Results of the Removal of the Ovaries and Tubes. *Referee*, Dr. William T. Lusk, of New York. *Co-referee*, Dr. Wharton Sinkler, of Philadelphia.

Nerve-stretching in Inveterate Cases of Trigeminal Neuralgia, by Dr. James Stewart, of Montreal.

On the Diseases of the Kidney, popularly called "Bright's Disease," by Dr. F. Delafield, of New York.

Note on the Recognition of Certain Cases of Epilepsy, accompanied by Albuminuria, which might be mistaken for Cases of Uremic Convulsions, by Dr. James Tyson, of Philadelphia.

Bradycardia in Acute Articular Rheumatism, by Dr. I. E. Atkinson, of Baltimore.

Session of the Congress, 3 P.M.

The Late Manifestations of Syphilis. *Referee*, Dr. Phineas S. Conner, of Cincinnati. *Co-referee*, Dr. Abner Post, of Boston.

The President's Address will be delivered in the Lecture Hall of the National Museum at 8 P.M., and will be followed by the reception of the President from 9.30 to 12 P.M.

THURSDAY, SEPTEMBER 24TH.

Session of the Association, 10 A.M.

Discussion on the Relations between Arterial Disease and Visceral Changes. *Referee*, Dr. George L. Peabody, of New York. *Co-referee*, Dr. W. T. Councilman, of Baltimore.

Intestinal Perforation in Typhoid Fever, by Dr. R. H. Fitz, of Boston.

The Relation of Drinking-water to Disease, by Dr. Henry P. Walcott, of Cambridge.

A Contribution to the Pathology of Pernicious Anemia, by Dr. J. P. Crozer Griffith and Dr. Charles W. Burr, of Philadelphia.

On Changes in the Red Blood-corpuscles in the Pernicious Anemia of Texas Cattle Fever, (by invitation) by Dr. Theobald Smith, of Washington.

Session of the Congress, 3 P.M.

Fibroid Processes (Chronic Interstitial-Inflammation Scleroses): Their Pathology and Etiology, with Special Reference to the Influence of Diathesis and Heredity. *Referee*, Dr. A. L. Loomis, of New York City. *Co-referee*, Dr. William Osler, of Baltimore.

Dinner, conjointly with the American Surgical Association, in honor of foreign guests, at the Arlington Hotel, at 8 P.M.

FRIDAY, SEPTEMBER 25TH.

Session of the Association, 10 A.M.

The Condition and Prospects of the Library of the Surgeon-General's Office, and its Index Catalogue, by Dr. John S. Billings, of Washington.

Sequel to a Case of Slow Pulse (Purdy), by Dr. D. W. Prentiss, of Washington.

Report of Autopsy, by Dr. Robert T. Edes, of Washington.

Grave Forms of Purpura Hemorrhagica, by Dr. J. H. Musser, of Philadelphia.

Pathological Histology of Acute and Chronic Appendicitis, by Dr. William F. Whitney, of Boston.

The Treatment of Typhoid Fever by Systematic Cold Bathing, by Dr. James C. Wilson, of Philadelphia.

Concluding business.

Session of the Congress, 3 P.M.

If necessary, the discussion on the "Conditions Underlying the Infection of Wounds," etc., will be resumed.

Drs. James G. Glover and William M. Ord, of London; Drs. McCall Anderson and W. T. Gairdner, of Glasgow; Dr. J. Battey Tuke, of Edinburgh; Professor Curschman, of Leipsic; Professor Kühne, of Heidelberg; and Dr. Löwenberg, of Paris, have already accepted the invitation of the Association to attend the Congress, and will be the guests of the Association, participating in the discussions of the papers read before it.

The Association will hold its meeting in Hall No. 1 of the Grand Army Building, 1412 and 1414 Pennsylvania Avenue, and in the Main Hall of the same building the meetings of the Congress will be held.

Members of this Association are *ipso facto* members of the Congress, and as such are expected to register. Parlors 1 and 2 in the Arlington Hotel will be provided for that purpose, from which the mail of the members and guests will be distributed, and at which the city residence of each member or guest can be ascertained. The registration fee is five dollars.

A copy of the Transactions of the Congress will be sent to each person who may register, and only those who

may register, invited guests, and ladies accompanying them, will be admitted to the reception of the President.

Dr. Samuel C. Busey is the representative of the Association on the Committee of Arrangements, of which he is Chairman.

The American Gynecological Society will hold its sixteenth annual meeting at Washington, D. C., on September 22, 23, and 24, 1891. The following program has been arranged:

Tuesday, September 22d. Address of Welcome; by Dr. Joseph Taber Johnson, of Washington.

The Advantages of Mixed Anesthesia in Gynecological Surgery; by Dr. John C. Reeve, of Dayton, O.

Concealed Accidental Hemorrhage during Labor; by Dr. Henry C. Coe, of New York.

Diffuse Adenoma of the Uterine Body; by Dr. James R. Chadwick, of Boston.

The Influence of Season on Recurrent Pelvic Inflammations; by Dr. Frank P. Foster, of New York.

The Therapeutic Aspect of Some Ovarian Disorders; by Dr. Edward W. Jenks, of Detroit.

Insanity following Laparotomy; by Dr. J. M. Baldy, of Philadelphia.

Vaginal Hysterectomy by Morcellement: Technique and Indications for Operation; by Dr. Samuel Pozzi, of Paris, France.

A Clinical Study of Primary Carcinomatous and Sarcomatous Neoplasms between the Layers of the Broad Ligament, with Report of Cases; by Dr. Joseph E. Janvrin, of New York.

The Present and Improving Status of Cæsarean Surgery; by Dr. Robert P. Harris, of Philadelphia.

Unique Case of Multiple Neuro-lipomata following Laparotomy; by Dr. H. Marion Sims, of New York.

Wednesday, September 23d. President's Address.

The Treatment of Cancer of the Cervix Uteri by High Amputation; Second Series of Cases, with Additional Report on the First Series; by Dr. William H. Baker, of Boston.

The Advantages of Delivery in the Left Lateral Posture; by Dr. Henry J. Garrigues, of New York.

The Influence of Imperfect Development as a Cause of Uterine Disease; by Dr. W. Gill Wylie, of New York.

The Technique of Vaginal Fixation of the Stump in Abdominal Hysterectomy; by Dr. Henry T. Byford, of Chicago.

Can we Avoid Mural Abscesses and Ventral Herniæ after Laparotomy? by Dr. Horace T. Hanks, of New York.

Some Clinical Testimony as to the Ultimate Results of Removal of the Uterine Appendages; by Dr. Thaddeus A. Reamy, of Cincinnati.

Indications for Abdominal Section in the Treatment of Puerperal Pelvic Inflammations; by Dr. R. B. Maury, of Memphis, Tenn.

A Study Relative to the Functions of the Reproductive Organs in American Indian Women; by Dr. Andrew F. Currier, of New York.

The Immediate Closure of Laceration of the Cervix; by Dr. Cornelius Kollock, of Cheraw, S. C.

The Conservative Treatment of Pelvic Tumors and Diseases; by Dr. Eugene Gehrung, of St. Louis.

The Anatomical Relations of the Lacerated Perineum to the Mechanics of its Causation; by Dr. Edward Reynolds, of Boston.

Thursday, September 24th. In Memoriam—Dr. Fordyce Barker; by Dr. James R. Chadwick, of Boston.

Ureteritis in the Female; by Dr. Matthew D. Mann, of Buffalo.

The Surgical Treatment of Retroversion and Prolapse of the Uterus; by Dr. Paul F. Mundé, of New York.

A Paper; by Dr. Theophilus Parvin, of Philadelphia.

Series of One Hundred Laparotomies; My Mistakes and Failures; by Dr. A. Palmer Dudley, of New York.

Laparotomy in Trendelenburg's Posture, with Exhibition of a New Operating-table; by Dr. Clement Cleveland, of New York.

The Electrical Treatment of Uterine Fibroids in England; by Dr. George Keith, of Brooklyn.

Diabetes Mellitus Gravidarum; by Dr. Henry D. Fry, of Washington.

A Successful Porro Operation; by Dr. R. Stansbury Sutton, of Pittsburg, Pa.

An Argument against the Stem-pessary, or so-called Drain-tube; by Dr. Egbert H. Grandin, of New York.

American Ophthalmological Society.—The twenty-seventh annual meeting of the American Ophthalmological Society will be held this year, beginning on Wednesday, the 23d of September, at the Arlington House, Washington, D. C.

Titles of the following papers to be read at the meeting have been received, and will take precedence on the bulletin:

Gouty Retinitis—Neuro-retinitis and Chorio-retinitis; History of Case of Brain Tumor with Autopsy; The Operative Treatment of Detachment of the Retina by Schöler's Method, with Report of Five Cases; by Dr. C. S. Bull.

The Use of Vaselin in Gonorrheal Conjunctivitis; by Dr. F. M. Wilson.

Case of Orbital Traumatism followed by Immediate Monocular Blindness due to Fracture of the Foramen Opticum; by Dr. P. A. Callan.

The Significance of Macular Changes in Advancing Myopia; by Dr. H. Derby.

Glaucoma after Extraction of Cataract; by Dr. F. Buller.

The Blind of New York City; by Dr. H. S. Oppenheimer.

Additional Experiments to Determine the Lesion in Quinine Blindness; A Case of Elephantiasis of the Eyelid; A Case of Acute Glaucoma occurring in an Eye with Coloboma of the Iris and Supernumerary Pupils (the first two papers illustrated by photo-micrographs and microscopic slides); by Dr. G. E. de Schweinitz.

A Clinical Study of the Ocular Symptoms found in the so-called Mongolian Type of Idiocy; by Dr. C. A. Oliver.

Extraction of Foreign Bodies from the Vitreous; by Dr. E. E. Holt.

Contributions to the Study of Heterophoria; by Dr. Swan M. Burnett.

Report of Cases of Cataract Extraction; by Dr. D. Webster.

Extraction of Foreign Bodies from the Interior of the Eyeball; by Dr. S. B. St. John.

A Partially Bony Growth of Orbit—Removal—Recovery; by Dr. B. L. Milliken.

Clinical Studies in Scotoma Scintillans; by Dr. D. De Beck.

Retinal Vessel Observations in Contusion of the Brain; by Dr. A. G. Heyl.

Ulcerative Keratitis in the Negro; Eye Complications in La Grippe; by Dr. J. A. Andrews.

Subnormal Accommodative Power in Young Persons a not infrequent Cause of Asthenopia; A Case of Successful Skin-grafting upon the Eyelid by Thiersch's Method; Supplementary Note to the Case of Useful Vision maintained by the Aid of a Totally Dislocated Lens, heretofore reported to the Society; by Dr. S. Theobald.

The Occurrence, Prevention, and Management of Prolapse of the Iris in Extraction of Cataract; Demonstration of a Roller Forceps for Pressing Out Trachomatous Granulations according to the Mangle Principle; by Dr. H. Knapp.

Recurrent Inflammation of Tenon's Capsule of both Eyes in connection with Mercurial Poisoning; Phlegmon of the Orbit in the Newborn; Gangrene of the Skin of both Lids in both Eyes; by Dr. C. J. Kipp.

On the Measurement of Simple and Compound Lenses; by Dr. L. Howe.

Routine Syringing-out of Cortical Matter in Cataract Extraction as Illustrated in 100 Cases; by Dr. J. A. Lippincott.

Two Cases of Intense Vertigo produced by an Attempted Correction of Astigmatic Refraction; by Dr. George Strawbridge.

The American Surgical Association will hold its annual meeting at Washington, D. C., September 22, 23, 24, and 25, 1891. The contemplated program includes discussions upon the following subjects:

Present Status of Brain-Surgery; by Dr. D. Hayes Agnew, of Philadelphia.

Report of the Committee on the Results which Should be Considered as Satisfactory, of Treatment of Fractures of the Shaft of the Femur; by Dr. Stephen Smith, of New York.

Conditions Underlying the Infection of Wounds: including a discussion of Disinfection with reference to Treatment of Wounds; of the Relation of Bacteria to Suppuration; of the Resistance of Tissues to the Multiplication of Bacteria; and of the Effects of Antiseptic Agents on Wounds.

Aseptic and Antiseptic Details in Operative Surgery; by Dr. A. G. Gerster, of New York.

Surgical Treatment of Injuries and Diseases of the Vertebral Column; by Dr. J. William White, of Philadelphia.

On Retro-peritoneal Abdominal Tumors, and Especially Those Involving the Kidney, by Dr. A. Vander Veer, of Albany, N. Y.

The Late Manifestations of Syphilis.

Recurrence of Cancer of the Breast; by Dr. Frederic S. Dennis, of New York.

The Treatment of Tuberculosis of Bones and Joints by Parenchymatous and Intra-articular Injections; by Dr. Nicholas Senn, of Milwaukee, Wis.

Fibroid Processes (Chronic Interstitial Inflammation, Scleroses): Their Pathology and Etiology, with Special Reference to the Influence of Diathesis and Heredity.

Treatment of Fractures Involving the Elbow-joint; by Dr. Lewis A. Stimson, of New York.

Fractures Involving Upper Third of Femur, Exclusive of Neck; by Dr. Oscar H. Allis, of Philadelphia.

Thoracic Surgery; by Dr. DeForrest Willard, of Philadelphia.

A Case of Diffuse Hypertrophy of the Breasts, with Photographs; by Dr. C. P. Porter, of Boston, Mass.

Fractures of the Bones which form the Elbow-joint, and their Treatment; by Dr. Levi C. Lane, of San Francisco, Cal.

Old Unreduced Luxations of Elbow; by Dr. Lewis A. Stimson, of New York.

The Study of a Case of Hemiplegia with Aphasia, following Ligature of Common Carotid Artery; by Dr. J. Ewing Mears, of Philadelphia.

Investigation of Pistol-shot Wounds of the Skull, and their Treatment; by Dr. E. H. Bradford, Boston, Massachusetts.

The Result of some Experiments in the Filling of Cavities in Bones following Operations for Caries; by Dr. E. H. Bradford, of Boston, Mass.

The American Otological Society will hold its twenty-fourth annual meeting, September 22, 1891, at Washington, D. C. Titles of the following papers to be read at the meeting have been announced:

Some Partially Successful Attempts to Promote the Healing of Old Perforations of the Tympanic Membrane; by Dr. S. Theobald.

An Unusual Form of Dislocation of the Malleus Handle; by Dr. S. Theobald.

Some Unusually Severe Cases of Mastoid Disease in Influenza; by Dr. H. Knapp.

Three Cases of Suppurative Otitis with Complications and One Death; by Dr. F. M. Wilson.

A Case of Suppuration, Exostosis, and Otitic Epilepsy—Trephining followed by Fatal Septic Meningitis; With a Consideration of Other Specimens, Illustrating the Avenues of Communication of Otitis to the Brain; by Dr. B. Alexander Randall.

Notes on the Use of the Leiter Coil in the Early Stage of Mastoid Disease; by Dr. Gorham Bacon.

A paper (title not yet announced); by Dr. C. J. Blake.

Acute Suppuration of the Middle Ear; Meningitis; death; autopsy; no involvement of the Temporal Bone; by Dr. J. M. Ray.

A Concluding Communication on the Anatomy of the Elephant's Ear; by Dr. Huntington Richards.

Membership in the American Medical Association is open to members of any State or local Medical Society entitled to send delegates to the Association who will send to the Treasurer of the Association, Dr. Richard J. Dunglison, Lock Box 1274, Philadelphia, Pa., a certificate or statement that the applicant is in good standing in his own Society, signed by the President and Secretary of said Society, with five dollars for annual dues. Attendance as a delegate at an annual meeting of the Association is not necessary in order to obtain membership. The weekly journal of the Association is forwarded regularly to members.